

GREEN'S FRUIT GROWER

The Oldest Fruit Journal in America



Charles A. Green, Editor

Rochester, N. Y.

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March, 1915

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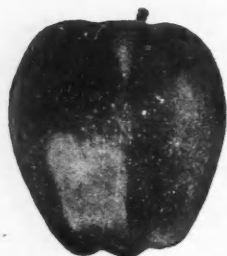
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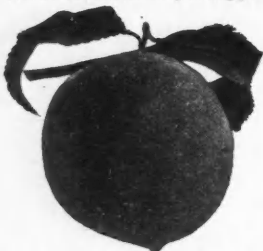


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Guaranteed Safe Arrival of all Parcel Post or Express shipments of plants to any station in the United States.

\$2.00 Special Collection Enough to plant a place 50 x 50 ft. 400 plants, one hundred each extra-early, early, mid-season and late varieties, suited to your locality. Satisfaction guaranteed. Send \$2.00 now for Special Collection "A."

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The Oldest
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GREEN'S FRUIT GROWER

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Volume 35

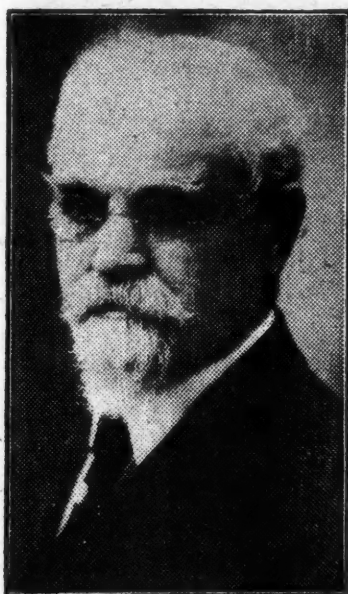
Rochester, N. Y., March, 1915

Number 3

Sixtieth Annual Meeting

of the Western New York Horticultural Society
Held at Rochester, N. Y., January 27, 28 and 29

Reported by C. A. GREEN



Mr. John Hall, for 26 years Secretary of the Western New York Horticultural Society.

less desirable portions of the state, where social and economic conditions are less favorable than in other sections. It is fair to raise the question whether the profits now realized in agriculture justify an attempt to wring profit from the less promising opportunities."

Dr. Jordan said that large capital would be required to reclaim unused land, and said that, in his belief, the better use of present good land would solve the problem of agricultural production better than to attempt to profit by poor land. "In my judgment," he said, "the demand for the reclamation of our less desirable land in New York to-day is based on fallacy."

All About Dwarf Apple Trees

Our genial friend and correspondent, George T. Powell of the Hudson river section of New York, gave his experience with dwarf apple trees planted for market or for home supply, or as objects of beauty upon the lawn. About ten years ago Mr. Powell planted one hundred Red Astrachan dwarf apple trees. He did not realize that these dwarf trees would grow so large as they have grown, therefore, if he were planting again he would not plant so closely as he did. He considers 10 to 11 feet too close for planting dwarf apple trees; 15 feet apart each way is a safe distance.

There are two dwarf apple stocks used for dwarfing the apple tree. One is known as the Paradise stock and the other as the Doucin. These stocks are purchased in France and are somewhat mixed as they arrive in this country. The Paradise stock or seedling dwarfs the tree far more than the Doucin. He has succeeded with both Paradise and Doucin stocks. Where very small trees are desired the Paradise stock should be used. He would call the trees produced by the Doucin stocks half dwarf. The Doucin stock in Europe is sometimes known as the broad leaved Paradise.

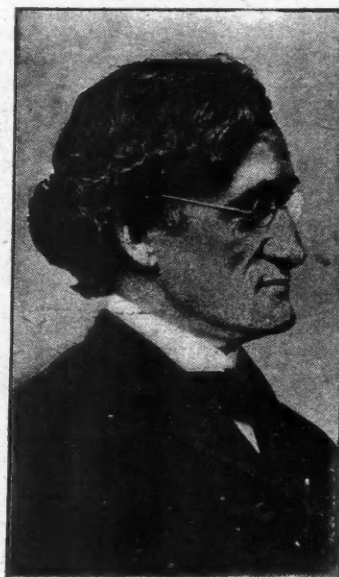
As I understood, Mr. Powell planted his dwarf apple trees as fillers in the commercial orchard among standard trees. Many years ago he was advised by a friend to plant in his commercial apple orchard filler trees, being told that by this method far greater profit could be secured from his orchards. From the experience he has had with filler trees, he is not so enthusiastic over them as he was formerly. He says that the filler trees—though of varieties of slow growth such as Yellow Transparent, King and Melon—make the orchard too crowded after the lapse of years.

The dwarf apple trees came into bearing at the age of three or four years. The fruit was larger and more beautifully colored than the fruit of ordinary standard apple trees and sold for higher prices than ordinarily. His experience teaches that dwarf apples should not be grown on poor soil and that they will not succeed unless they have good cultivation, good care and attention. He heads them back so that the lower branches are not over two feet from the ground. The quality of the fruit grown on the dwarf apple trees is better than that grown on the ordinary standard trees. He has sold the dwarf apples at from \$1.50 to \$3.00 per bushel box.

In 1908 Mr. Powell planted 150 Cox Orange dwarf apple trees grown on Doucin stock 20 feet apart. His experience is that 20 feet apart is too close for such dwarf apple trees and he desires now to cut out one-half the trees. He sent thirty barrels of these apples to Europe last fall, but owing to the war, they were not delivered at the point desired and yielded little profit, but the quality of the fruit was such that it should have sold at \$10.00 per barrel.

In 1908 Mr. Powell planted 500 Northern Spy, Wealthy and McIntosh apple trees both on the Paradise and the Doucin stocks. Those on the Doucin stock have yielded 1½ bushels per tree, while the apples picked from the Paradise dwarfs were smaller, yielding one box per tree. He has sold the fruit from his dwarf apple trees to hotels at \$2.00 per box. He has found that hotels do not desire very large apples. The hotels serve one apple to each guest.

He has noticed a tendency in dwarf apples to be bent over or swayed by the wind when heavily laden with fruit, the same as has been noticed in high-headed pear trees when heavily laden. As a remedy for this, he



Dr. Liberty H. Bailey, Ithaca, N. Y.
Courtesy of The Cornell Countryman.

WILLIAM C. BARRY, for twenty-four years president of the Western New York Horticultural Society, predicted that for only a few years would the competition of Western apple growers continue. It would last, he said, until the public learned that, "while the Western product is of beautiful complexion, it is deficient in quality." Eventually, Mr. Barry declared, the highly flavored New York fruit would be appreciated and purchased on its merits, and, its superiority being conceded, sales would be made more easily and advantageously.

"The new apple-grading and branding law, as it now stands," said Mr. Barry, "needs amendment in some particulars, but when its defects are remedied the business will be established on a basis that will be productive of the most beneficial results."

In view of the large plantings of orchard trees in the last few years, growers have worried somewhat over the possibility of overproduction. Mr. Barry expressed the belief that the country was too vast and the population too great to have its need for fruit oversupplied.

"The public is gradually becoming convinced that a liberal supply of fruit for food means good health for every family," he said. "The old sayings, 'An apple a day keeps the doctor away' and 'An ounce of apple is worth a pound of cure,' were never so true as at the present time. That a very large number of the ills with which mankind is troubled may be prevented by a generous use of the apple as food, is the opinion of leading physicians all over the land."

Mr. Barry designated the new apple grading and branding law as "the most important step forward in furthering the best interests of the fruit industry that has been taken in years," although he said that the law as it stands at present needs amending in some particulars.

"One of the methods proposed whereby to increase our food supply," said Dr. Jordan, "is to bring into use lands that are now more or less abandoned for active agriculture. These lands as a rule are located in the

plants the trees deeper and banks up around the trunk. He is aware that this may in some instances cause the tree to send out roots from the grafted portion, but even if this occurs the tree will continue to be dwarf on account of the larger portion of dwarf apple roots supporting the tree.

The pruning of dwarf trees is more difficult than that of ordinary trees. He likes to keep the heads low by cutting back annually the leading shoots of the last season's growth and to thin out the branches moderately, doing this cutting back in July.

The advantage of dwarf apple trees over standard apple trees is that, being not much more than one-half the height of standard apple trees, they can be more easily sprayed and pruned, and the fruit more easily thinned and gathered. The fruit does not blow off from dwarf apple trees so seriously as from larger trees. He advises the following varieties to be planted as dwarfs: Spy, Spitzenburg, Wagener, Mother, Bellflower, Banana, Red Astrachan, Jonathan, Red Canada and Wealthy. He does not consider King, Greening and Baldwin desirable for planting as dwarfs for market.

Dwarf apple are being planted frequently on the homes of wealthy people as objects of beauty, purely for ornamental purposes. They are planted on the great millionaires' estates as single specimens along the driveway, or as hedges, the trees planted 3 to 4 feet apart, or in groups or beds. These little dwarf apple trees, properly trained, are as beautiful as anything that can be suggested, when in bud or blossom, apple blossoms being among the most beautiful of all blossoms. Then when the beautifully tinted specimens appear in late summer, these little trees attract universal attention, the fruit being thinned and those specimens remaining attaining great size with beautiful coloring.

Prof. P. J. Parrott on Insecticides and Spraying

Prof. Parrott, of the New York Agricultural Experiment Station, discussed the pear psylla and the apple aphids (lice), the new law in grading and packing, and

some of the pests which scar and deform apples.

The pear psylla can be lessened by picking the rough bark off from the trunk and the branches of pear trees, being careful in removing this bark not to disturb the inner bark or mar the trees. The psylla harbors under the bark in winter.

Prof. Parrott is confident that the new law on grading apples in New York state, requiring more careful attention and greater discrimination, will bring about good results to the orchardists, but he predicts that many will have difficulty in deciding what is acceptable and what is not in the Standard A and B grades. It is sometimes difficult to decide from the outer appearance of the apple what has occurred inside. For instance, the work of the codling moth can be distinguished by the insect entering at the calyx or blossom end and extending to the core. The work of the canker worm is not so easily discerned before the apple is cut. The dimples occurring in apples may be caused by the red bug which punctures the apple in its early stages. In the attempt of the apple to heal this puncture a dimple is made in the fruit which injures its appearance. The summer curculio takes a small bite out of the apple, which causes a black scab or blemish having something the appearance of the attack of the codling moth, but this is nothing like so serious as the attack of the codling moth, as but slight injury is done to the apple, the black spot extending only one-eighth of an inch below the surface, and yet this is a blemish. The marks of the San Jose scale on the apple are reddish splashes, but these are often caused by the insects and yet are alike in appearance.

The work of the red bug, being done early in the season, often causes the apples to drop. If further information is desired on the red bug, write the New York Experiment Station, Geneva, N. Y., for bulletin No. 291. One pint of nicotine to one hundred gallons lime and sulphur is recommended as a remedy for the red bug.

Prof. Parrott mentioned a revival of the old fake, by which thousands of orchardists have been deprived of their hard earned dollars by traveling peddlers selling chemicals to be injected into the holes bored into the trunks of trees. These vendors have claimed that the sap of trees can be so impregnated with cyanide or some other poison as to destroy insects feeding upon the tree, but this in nearly all instances results in failure and nothing of this kind should be encouraged. Hundreds of trees in certain orchards have been destroyed by poisons injected in holes bored in the trunks of the trees.

George T. Powell remarked that those who have large orchards sometimes have difficulty in not having time to do all the spraying at the proper date, therefore he practiced winter spraying so far as possible or advisable. This spraying must not be done during freezing weather. The spray to all branches of the trees must evaporate before it freezes in order to secure the best results.

Prizes for Best Apples

I was pleased to learn that W. L. Hutchins and A. L. Hutchins, both located near Green's Fruit Farms, received prizes for the best boxes and barrels of King and Spy apples. Here is an indication that Green's Fruit Farms are situated in a favorable location for the production of fine fruit. I confess that I have had fears in past years that we were too far from Lake Ontario to get the best results. Indeed I cannot overlook the fact that the nearer the orchards are located to Lake Ontario the safer they are from changes in temperature and from late spring frosts. Our orchards are located about fifteen miles from Lake Ontario.

Prof. L. H. Bailey's Address

L. H. Bailey of Ithaca, N. Y., took as his subject, "Shall We Have an Over-Production of Fruit?" He said:

"My memory may not go back so far or be so reliable as that of other men in this audience, and yet I seem to remember the question I am now considering for a distance of some forty years. I am not making this observation to qualify myself as capable of answering it, but only to let some of the younger and more anxious of my friends know that this question of over-production of fruit is older than they. I have not known the question to be answered by any person to the satisfaction of others; and yet we are still raising fruit and still worrying about the future. As one of the older men, I am glad to pass on the question to the keener folk of the new generation; and I do not doubt that they will pass it down to others. Perhaps by the time men cease growing fruit altogether, the question will be definitely settled.

Unfortunately we have no comparable figures of increase or decrease of standing apple orchards for North America, or for the United States alone, for any series of years. The United States census of 1890 reported 120,152,795 "bearing trees;" the census of 1900 reported 201,794,764 "trees of the bearing age;" the census of 1910 reported 151,822,840 "trees of bearing age," and 65,791,848 "trees not of bearing age." These figures would appear to indicate, therefore, that the number of apple trees of bearing age had increased about 70 per cent. from 1890 to 1900, and decreased about 25 per cent. from 1900 to 1910. However, the census questions were undoubtedly differently interpreted from year to year, and it is therefore unsafe to draw very definite conclusions from them. In view of my rather remote touch with statistical methods, I have secured the aid of Nat C. Murray, assistant statistician of the bureau of crop estimates of the United States department of agriculture, who has compiled for me many useful figures (not all of which I have been able to use in this

paper) and has suggested conclusions from his own experience. Mr. Murray thinks that the actual increase from 1890 to 1900 was certainly less than 70 per cent., and the decrease from 1900 to 1910 (if there was any decrease) was not so much as 25 per cent. The census report of 1910 calls attention to the fact that the figures of 1900 and 1910 are not strictly comparable, and therefore no comparisons were drawn.

Decrease in Supply of Apples

The reports of yields of apples show a decrease of nearly 17 per cent. in 1910 as compared with 1900; and this tends to corroborate the general decline; but these figures are of course founded on the crops of two particular years, 1899 and 1909, and we do not know just how far these years are comparable as to yields. From supplementary calculations, Mr. Murray finds indications that there was a decrease in the bearing capacity of apple trees from 1899 to 1909 of about 12 per cent.; but he adds that he does not personally think the decrease to have been more than probably 7 per cent. or 8 per cent. If we use the census figures for 1899 and 1909, and then interpolate the inter-census years to date by the estimates of the crop reporters, we shall have sixteen years of apple production for comparison. We find the smallest total production in this period in 1907, (119,560,000 bushels), and the largest in 1914 (253,900,000 bushels); but the production for 1913 is not as large as that for 1899, 1900, 1902, 1903, or 1904. If we divide this sixteen-year period into two groups of eight years (1899-1906, and 1907-1914), we find that the average yearly production for the first period considerably exceeds that for the second period. The great crop of 1914 does not appear to be the result of the extensive plantings in the newer regions, inasmuch as it was produced throughout



The Old Way and the New

The old way has been for the city man, the villager, and sometimes the owner of farms, to buy an apple at the fruit stand and pay five cents for it. This man has formerly considered himself an apple eater. The new way is to plant fruit trees and vines in your fruit garden near your dwelling, where you are tempted to eat fruit morning, noon and night, thus promoting your health and the health and welfare of your family. It is surprising how much fruit can be grown on a city lot 50 by 100 ft. or 50 by 150 ft. I was shown such a fruit garden on a small city lot near the office of Green's Fruit Grower, where the large family secured more apples, peaches, pears, plums, grapes, raspberries, blackberries and strawberries than they could consume, having some for sale or to give away to the neighbors.

most of the United States, being specially large in the Northeastern states. There is good evidence, therefore, to show that whatever may be the uncertainties in the making of comparisons, the apple production of the country, as measured by statistics, has not increased in recent years.

We have seen that the census of 1910 reports a total of about 66,000,000 apple trees in the United States of non-bearing age, as against 151,000,000 of bearing age; in other words, the new plantings represented by all trees not of bearing age are only about two-fifths of the total standing trees. Allowing twenty years as the average bearing life of a tree, 7,550,000 new trees, as Murray points out, would be required yearly to keep a constant number of 151,000,000 trees in bearing; and allowing seven years as an average age at which a tree may be said to be of bearing age, 66,000,000 non-bearing trees at any one time would provide for about 9,430,000 trees coming into bearing annually, or an excess of about 1,880,000 trees annually, which would indicate an expansion in planting of about 1 1/4 per cent. yearly.

Ohio Apples

In Ohio, which is one of the major apple states, the assessors estimate the area devoted to apples and also the production. While there is a general increase in acreage from 1903 to 1911, yet the acreage for 1911 is considerably less than that reported for 1900 and 1901. The yields are very various, and do not correspond with the estimated acreage. The largest yield, 12 1/2 million bushels, is in 1911; other very large yields were in 1906, 1904, and 1900; while the smallest yield, under 2 1/2 million bushels, was in 1907, with other very small yields in 1905 and 1909.

Such statistics as I have been able to secure of apple production in western Europe do not indicate expansion of the planting. Whether the present war will influence this planting we can only conjecture, but it probably will not stimulate the setting of fruit trees, and it is likely to lessen such work for the present. Brief statistics for Great Britain and France are given in Tables E and F. The production in the latter country exhibits the widest variation, but apparently so far as these figures show, it is not an expanding variation. It is probable that the international distribution in Europe will be impeded for years to come, and that exterior countries will supply much of the extra demand.

Latterly we have heard much of the apple product of the Australian-New Zealand region. The product of these lands reaches the European market largely out of our season, and an important part of their yield will supply the South American market. They show a good expansion; and a similar exhibit would be made by New Zealand. I think that all this, however, does not influence to any considerable extent the problem of over-production that we are considering here.

Pennsylvania Horticulturists

Reported for Green's Fruit Grower by
CYRUS T. FOX

THE fifty-sixth annual meeting of the State Horticultural Association of Pennsylvania, held at Wilkes-Barre, on January 19, 20 and 21, was not as well attended as in former years. The principal reason for this is that it was held in a section of the state in which there are few members of the association, and there was such a lack of interest that but few members were secured. The fruit show was the finest in years, but less than 1,000 persons paid the small admission price of 10 cents to see it. The Wilkes-Barre Chamber of Commerce went to considerable expense on the association's account, and provided the beautiful Irem Temple as the meeting place.

Instructors of the Pennsylvania State College were the principal speakers. They are always interesting, but the members desire more practical talks. An exception may be made as to Dr. J. P. Stewart, who has been conducting a series of experiments in fruit culture the past seven years, at the college and experiment stations, embracing the subjects of cultivation, fertilization, inter-cropping and cover crops. His talk on his line of work, illustrated by his charts, was exceedingly instructive. It took the place of the usual report of the General Fruit Committee, of which Dr. Stewart is the chairman.

There were some lecturers present from other states, and they were heartily greeted. These were Prof. Knapp, of Cornell University; Prof. Paddock, of the Ohio University; S. H. Fulton of West Virginia; and L. Willard Minch, a New Jersey market gardener.

Professor Knapp spoke on the grading and packing of eastern apples and the influence of the New York apple grading and branding law, which he thought has proven a decided benefit to the New York apple grower.

As the result of his remarks it was decided to take the necessary steps to secure the passage of a similar law by the Pennsylvania legislature now in session.

Professor Paddock illustrated the pruning of apple trees, using lantern slides for the purpose. Mr. Fulton showed the orchard methods of West Virginia growers, and Mr. Minch urged greater care in preparing orchard and garden products for market.

President Tyson, in his address, called attention to legislation that is desired, viz., a grading and branding law, amendment of the weights and measures act, and the adoption of an employer's liability law that will not work a hardship on the farmer, fruit grower and gardener.

These points were covered by the resolutions adopted, as, also, the endorsement of the importance and value to the farmers and fruit growers of the state constabulary, and an expression as to the necessity of liberal appropriations for the continuance of the work of the Department of Agriculture, the State College and Agricultural Experiment Station. Better provision for the horticultural interests in the agricultural appropriation was suggested.

A disappointment was the absence of Dr. H. A. Surface, State Zoologist, who was detained at Harrisburg by his official duties. Dr. Surface regretted his inability to be present, and forwarded his answers to the 30 queries mentioned in the "Question Box" on the program, which were read by his personal representative, Mr. Fox.

Professor Orton, of State College, gave some valuable information on the subject of "nursery quarantine," and was followed by Mr. Fox, who showed the system of nursery inspection as practiced in Pennsylvania by Chief Inspector E. B. Engle, of Harrisburg, and his assistants.

Professor M. G. Kains, of State College, in a lucid manner, showed how to solve the "Low Grade Fruit Problem," by converting seconds into a number of commercial articles, including apple butter, mince meat and marmalade.

There was an absence of the older members of the association. The writer, who joined in 1870, was the oldest in attendance according to years of membership. The city of Reading was chosen for the meeting in January, 1916.

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Renewing Old and Young Apple Trees by Means of Grafting

Editor of Green's Fruit Grower:—There are many methods of top-working trees, that is, different cuts, etc., but the one which seems to have proved itself most successful on bearing trees, is known as the "Coburn Method."

One of the most essential points to consider in this work is the time to do it. It should be done in February or March, not later than the latter month. If your work is prolonged until the latter part of March, when vegetation begins, your degree of success will depend altogether on the season. It is rather uncomfortable to do this work in February, on cold frosty mornings, owing to the fact that the grafting wax must be kept warm or at an even temperature in order that it may be applied nicely and properly to the wounds. Then, if delayed until pleasant weather, after the sap has begun to circulate freely through the branches of the tree, only a small per cent of the grafts will grow.

Trees can be successfully changed from the time of planting to fifteen or even twenty years of age, but it is hardly practical in a commercial way after the trees have grown so old.

Again we find that weak, unhealthy trees are benefited by this work, due to the fact that it checks growth in such a way that the trees become more vigorous by the time the grafts have reached bearing age, and thus prolongs life and proves to be a profitable tree.

The work is accomplished by removing all limbs close to the body of the tree, except one, two, or on extremely large trees possibly three main branches. The limbs should be sawed off square, and as near the body of the tree and ground as possible. The limbs retained should be left in the center or on the southwest side, which affords some shade, and their principal work is to maintain the circulation of sap above wounds—these limbs are commonly called "sap pullers." It is of great importance to reserve these branches for the purpose of drawing sap higher than the grafts in order that the healing process may go on as rapidly as possible. To remove all limbs, and at the same time get the proper growth of grafts, would cause a rush of sap to the wound and the graft would likely grow so fast as to be easily blown off; this is particularly true of buds. This also applies to the nature and constitution of man. He will recover much quicker with the loss of one limb than all at the same time. Larger trees are more susceptible to adverse conditions and more liable to die than are young trees.

All limbs may be grafted from one inch up to limbs having diameter of two to four inches. One graft is all that is needed to each limb; however on large limbs I would advise using two to three and often four grafts. This acts as a protection from birds, wind, etc., and helps to heal the wound. More or less damage is done by birds lighting on stub when the graft is quite small; and by using two or three grafts, you have better assurance of one good graft to each limb.

Again when scions are grown to about one foot in length they are sometimes blown off by the heavy winds. After the first season, cut off all to one graft on each stub. As soon as the sap starts after the young grafts have been placed, numerous water sprouts shoot up all over the body and even down close to the graft, then it is hard to detect the graft from the water sprouts if allowed to grow the entire season. These water sprouts should be rubbed off by hand when three to six inches in length, and if you find that your stand of grafts be poor, or find a place where one has been broken, it is well to leave the water sprout as near the end of stub as possible and, in places where you think there are not sufficient grafts, allow a water sprout to grow, and when about the size of a lead pencil, go through and bud each water sprout. The best time for this work to be done is during the month of August. By following the foregoing principles, the entire tree is practically changed in one season.

The following spring when your grafts are from six to eighteen inches in length, and in many cases have known them to make a tree foot growth in one season, it is well to leave the limbs which we call "sap pullers," during the first season. Sometimes these limbs may be sawed off entirely. This should be taken into consideration when they are left in the tree. Leave those limbs which you think should be sawed off and remove them the following spring, or if they are such limbs as may be needed the same process of grafting can be used on them as was used the spring before on the other part of trees.

If close attention is given these limbs left first season, it is rarely necessary to graft it the following season.

A "V" shape cut is made with saw and grafting knife or the ordinary pocket knife can be used to smooth the cut made by saw, and then place firmly in the cut, being careful to see the two barks cross. It is better that they cross than to have them perfectly smooth, as the bark on the young scions is much thinner than that on the old tree. The two tissues may not meet, which will result in a dead graft. After your grafts or scions have been firmly placed in cut, cover carefully with grafting wax, made as follows:

Resin, 4 lbs.; beeswax, 2 lbs.; tallow, 1 lb.;—or resin, 6 lbs.; beeswax, 2 lbs.; 1 pint of linseed oil.

Sometimes paraffin is substituted, but beeswax is the more preferable. Melt your resin, beeswax and tallow in a bucket or other receptacle, and when it has been sufficiently dissolved and reached the boiling state, remove from fire and pour the entire mass into a

bucket of cold water, then work as you would candy until the different ingredients have been well assimilated.

It is advisable to go over the work once each week, and see that all wax remains intact, and in such condition as will prevent water from entering into crevice or wound. Trees thus treated should be well cultivated first season, after top-working. While we believe in thorough cultivation in all orchards, it is particularly essential in blocks top-worked.—J. F. Riddle, Kansas.

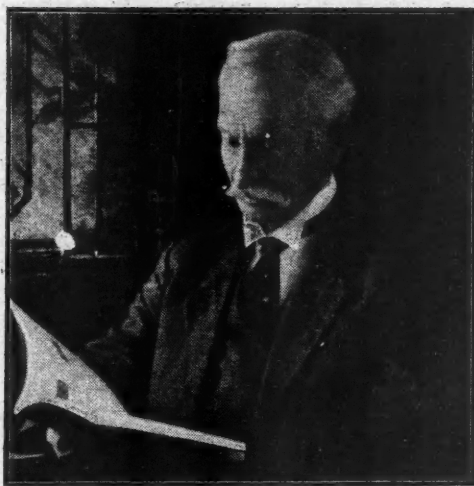
The New National Beverage, and How It Is Made

Written for Green's Fruit Grower by
CALVIN FORBES

THE grape and its fermented wine product have been in use since the early history of mankind. The manufacture of unfermented grape juice is of comparatively recent date. Notwithstanding the enormous quantity that is manufactured at the present time, very few people have any conception of its uses or the extent that it is now produced.

There are many large grape juice factories in south-western Michigan and it may be interesting to go with me through one.

A four story building 113 x 317 feet, built entirely of cement and brick, of such construction that it is fire proof, is the place that we will visit, used in the making of grape juice.



CALVIN FORBES

The grapes are mostly raised within a radius of eight or nine miles. They are drawn to the factory by the farmers who produce them. In case of a shortage of a crop in the immediate vicinity the grapes are shipped in by cars.

In the season for juice making, long rows of farm teams attached to heavily loaded wagons containing the ripe fruit, are drawn up before the factory buildings. Sometimes the line awaiting their turn to unload extends for a quarter of a mile. The grapes, as a rule, of the Concord variety, are taken from the wagons and placed upon trucks and run to the elevating conveyors. These take them to the upper story of the building where they are run through an immense machine that stems, grinds and sterilizes them. The grape pulp is then dropped into a line of cars on the next floor. Each car or receptacle forms a cheese ready for the huge press. Each car takes its turn under the press where the pulp and delicious juice part company forever.

From the press the juice is carried in aluminum pipes to the cellars where it is deposited in five gallon carboys to remain for a number of weeks, or perhaps months.

About the first of January the bottling process begins, and the juice that has been standing in the glass carboys is drawn off by means of syphons. Any sediment that has gathered on the bottom of the carboy is allowed to remain there undisturbed.

The juice is then conveyed through pipes to the bottling machines.

The boxes of empty bottles come from distant parts of the building by means of live rollers. They are stopped at the bottling machine where one boy quickly and accurately turns the bottles top down over a system of small pipes kept constantly in motion. The bottles move on through a boiler. In passing the pipes extending into the bottles are opened and the insides as well as the outsides of the bottles are thoroughly rinsed and sterilized. As the bottles emerge from this hot shower bath, another boy catches them and places them in another receptacle and they move upward and around through the machine. In their journey through the filling machine, every bottle is uniformly filled without stopping to see how it happened. Not a bottle escapes the downward motion of a machine that certainly is a "corker." Every bottle that passes that way is corked, capped and sent on its way to racks that pass through a steam heated oven. There they are again sterilized. As they leave these racks, they pass

through a labelling machine where they are dressed in a suit that appeals to the eye. Not to the taste.

After labelling, the product is finished and is packed in boxes of varying sizes to await orders for shipping.

When we know that this one factory made 400,000 gallons of unfermented grape juice last season, we at once begin to wonder where all of this great volume goes. The world is its market. There are few countries on this earth that do not taste the delicious grape juice of south-western Michigan. Why should they not? By the most scientific tests, it has been proven to be the most health-giving blood-making beverage known.

To exhibit how the demand for unfermented grape juice is increasing, we might show this one factory made in 1909, 40,000 gallons. In four years the product was increased to 400,000 gallons. To supply this one factory, 3,500 tons of Concord grapes were used.

Think of a continuous line of teams heavily loaded with that luscious fruit, twenty miles long: That is what creating this amount of grape juice would mean. This one factory has a capacity of consuming three hundred tons of grapes per day. Its actual daily work was about two hundred and fifty tons per day during the last season.

The greater part of this grape juice is sold directly to the dealer through the work of the traveling salesman. Traffic in grape juice is not confined to any one line of trade. Grocers, druggists and the hotels are the largest distributors. A very large amount is consumed by private families, and the demand from that source is rapidly increasing.

Grape juice is not only a drink, it is a food. In the home it is used in many ways. It is good in sickness, and in health. It is used in the makeup of many healthful and appetizing desserts. It is believed that unfermented grape juice will soon become the national beverage. That in time it will solve the great question of intemperance. Be that as it may, it is hoped that its use will increase until in a large measure it supplants the harmful drinks, both drugged and intoxicating, now so largely consumed.

Hints on Dehorning and Pruning Trees

There is much talk nowadays about dehorning trees. This practice, as it is usually carried on, is abominable and is a sure way of creating conditions favorable to disease and insects, says Farmer's Guide. No apple orchard can ever "come back" after a treatment such as some are subjected to. Dehorning not only breaks up the equilibrium between the roots and the top of the tree and leaves large open wounds and stubs that can never heal, but in time will give entrance to heart rot and other fungous diseases that will greatly injure the remaining parts. There is one exception to the above statements, which are made especially concerning apple trees. A peach tree, after it has been winter killed, may be cut back to stubs a foot or two long, and if the ends are painted and if the roots are in a good condition a new top will grow to take the place of the one that was killed.

A cut should never be made in the top of a tree unless it be made in a crotch, i. e., at the point of union between the branch and twig or limb and branch. The outer ends should be cut off as close as possible to the limb that is to be left. If pruners are used to take out parts of last year's growth, see to it that the cut is made on a slant directly outside of a bud that is pointing in the desired direction. When trees have been sprayed to control the San Jose scale it is best to reduce the amount of infested wood surface and favor the growth of new wood, at the same time giving more nourishment to those limbs and branches that have been deprived when the scales were alive.

When the equilibrium of the tree is disturbed it sends out water sprouts which usually make an enormous growth during the growing season. If these are cut off and stubs are left, they will send out lateral shoots and soon the top will become so thick that it will produce no fruit. It is a good rule to cut out all water sprouts or suckers, as they are sometimes called, as close to the main trunk as possible. If a limb or branch is needed where a water sprout has started, it may be left. Remember that if suckers are removed during the summer, the tree will regain its equilibrium the same season.

It is an established fact that a tree will always cling to its original habit of growth. If it has a tendency to grow in a tall, upright form, no amount of pruning can change this tendency, even though it may for a time seem to produce a better shaped top. This being the case, it is evident that proper pruning must take into consideration the habit of growth of any tree. All pruning should be done so that the tree may continue in its natural habits, yet to do so with the minor faults corrected. For example, Yellow Transparent apple trees will persist in making an upward growth, thick in the center. This should be corrected by thinning out the middle of the top and cutting the outer branches back to the bud or branch that points out and downward. In this way this type of tree may be made to conform to the desired vase shape, even though its tendency is still towards a thick, upright growth.

Rising Prices for Farms:—Out in Iowa farm land has risen to \$200 or \$300 an acre.

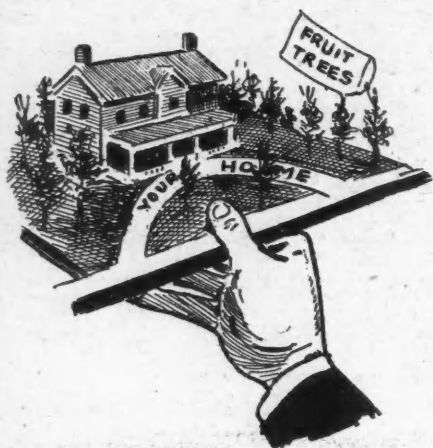
They talk of narrowing country roads from 60 feet down to 40, so that millions may be added to the output of wheat, corn and oats as expressed in dollars.

The state of things has produced a conservator of new sort.

A Physician's Retired Life in an Orchard

Written for Green's Fruit Grower by
JOHN E. TAYLOR

EVERYBODY in some way or other looks ahead for "the rainy day" or for the time when he can retire from the active business. Dr. H. C. Taggart, of Maine, has made preparations for that time by setting out a young orchard, having purchased a small farm about three miles from the place of his business. He is one of the prominent physicians of his county and for many years has been thinking over what he would like to do when he got ready to give up the strenuous work of his profession. He finally decided that an orchard was a good thing to have at such a time, and would be a source of income at the same time.



Trees Combining Usefulness with Beauty and Shade

Our artist has not placed the fruit trees in the above cut as our editor would have liked to place them. His main thought has been to represent fruit trees growing about the home of the farmer, the villager or the city man, but usually such fruit trees, vines and plants should be planted at the rear of the house in the fruit garden proper. If the fruit trees are planted at the front or side of the house, they should be planted something as a windbreak or as what we have called the hedge row system, containing dwarf pear trees, cherry trees, peach trees, apple or other fruit trees, three to six feet apart on the border, where they will bear fruit many years before they become crowded. But if the branches are cut back severely each year, cutting off most of the new growth, the trees can be kept dwarfed for almost a lifetime. I have planted these hedge rows of fruit trees on city lots and have succeeded even with peach trees, which are the least desirable of any fruit tree for this purpose. These peach trees planted not over three feet apart bore an abundance of fruit for many years.

About five years ago, he bought the farm on a high elevation overlooking one of the big rivers of the state and the village where he has practised his profession all his life. The farm was not much good when he bought it as far as the cultivation was concerned. It was somewhat rocky and had not been cared for. The first thing that he did was to build a cottage, and that summer he and his family began to spend their time there. He had made preparations for his orchard, and the spring that he bought the farm he set out 500 Ben Davis apple trees.

He did not expect to retire from his profession then, but he was looking ahead. He has already derived a great deal of pleasure from the orchard, though the trees have not produced any fruit yet. He does however get much benefit in cultivating his crops that he plants each year between the trees. One year he planted potatoes and he got enough from the crop to pay for the work of orchard. He planted another year, corn, and the orchard is thrifty and but less than a half dozen trees have died.

Expert orchardists tell him that he has one of the finest young orchards in the county and that in about three years he can expect to derive an income to exceed any investment that he could have made.

The doctor is looking ahead to the time when he will retire from his profession and spend his entire time at his farm with his orchard.

Fertilizing the Orchard

Dr. G. M. Twitchell, former president of the Maine Pomological Association, after many years of experience and success in fruit growing has come to believe that too much pains cannot be used in fertilizing the orchard. He has used the following formula, and his experience with it justifies a hearty endorsement for grain, grass and fruit trees: Nitrate of soda, 400 pounds; bone meal, fine, 300 pounds; meat tankage, 300 pounds; muriate of potash, 300 pounds; basic slag, 700 pounds; a 4-9-7 fertilizer.

For trees in bearing, 8 to 12 pounds sowed broadcast on the sod.

For young trees, 2 to 4 pounds worked into the soil about tree just as leaves start.

For top dressing grass field, 300 pounds per acre in when grass first starts and the same promptly when crop is housed.

Green's Fruit Grower

For seeding down, 800 to 1,200 pounds broadcast at last harrowing.

For potatoes, substitute acid phosphate for basic slag.

This formula is given for the benefit of orchardists who plant between their trees, seeding down later. Dr. Twitchell plants potatoes in his orchard and then turns it into grass land, leaving spaces around the trees entirely free from sod, and each year, while the orchard is in grass land, he goes to each tree with an instrument to clean out any sods.

Making a Map of the Orchard Farm

It may not be common to make a map of a farm, but the value can be best appreciated by one who has done it.

R. T. Patten of Eaton Mountain Farm, Somerset County, Maine, about five years ago bought a run-out farm and after he had completed his plans in regard to the upbuilding and had set out 1,000 apple trees, he had an expert engineer come and survey the farm. This was placed on a map.

It showed every apple tree on the farm and with the use of the map, the owner can keep run of each tree as to its growth, etc.

The map shows the fences, brooks, woods, buildings, crop divisions, roads, pasture, etc. These are all put into relative positions and one can see at a glance the position.

It would be worth the while of every farmer to make a complete map of his farm.

Keeping the Farm Accounts

It is not knowledge we lack, it is application.

Keeping accounts does not take time, it saves time, which is money. But keeping accounts without proper system means more books, more writing and unnecessary figures, and yet does not give clearly the showing made by each department.

It takes but a few seconds to make an entry now; disputes cannot arise if it is done. It is a matter of habit only, soon becomes automatic, and keeps customers satisfied, which is the cheapest advertising.

Knowledge of losses avail you nothing without prompt application of the remedies. To judge the efficiency of the remedy, you must have figures to show the results in different methods of handling each department.

Neatly printed billheads and letterheads, on good quality paper, are an incentive to make out bills and correspond. Your personality is conveyed by the quality of your stationery and neatness of the heading.

If you cannot answer inquiries the day received, acknowledge them, stating when you will give the desired information.

Bills and statements should be sent out regularly, whether due or not.

Working capital means money on hand and in the bank. Confine your business to the working capital at your disposal.

Fix a credit limit at below one-half your working capital and keep the total owed you by all customers within that amount. So sure as you trust out an amount in excess of your ready money, percentage of profits will decrease. Failures often occur from just this reason.

Anticipate large future payments by installments set aside regularly from the time they were contracted.

Note the difference between elapsed time and actual time necessary to do a certain piece of work. It is loss in dollars and cents. Farm labor can be and should be accomplished on schedule time.

Skilled help turns out most work with least fatigue. The most successful men never hurry. They plan ahead.

Chores are not boys' work. Scientific balanced ration feeding means cheaper and full capacity production, materially reducing costs.

Results depend no more on what you are doing than on things you are not doing or doing wrong.

The kind of farming and breed of stock you like best will pay you the largest profits. It is not necessary to practice the kind followed by the majority.

Convince yourself by proper accounting methods where your mistakes were, take a new lease on life and the old farm, and you will be surprised at the opportunities so long overlooked because they were near by.

In no other trade in this country today has the student the advantages of the farmer. Knowledge is your for the asking, either of the Department at Washington, D. C., or State colleges, or Commissioner of Agriculture. Any man, however successful, who doesn't keep records and take account of stock frequently, can be shown where he is losing money. He may show a large yearly profit, but in some department, were records kept, a loss would be shown that was greatly reducing his legitimate profit. Well kept accounts showing knowledge of details of your business, constitute one of the strongest arguments you can present to the banker when in need of more capital.—F. H. Sweet, Va.

Note.—Green's Fruit Grower offers one year's subscription and "Farm Record Book" as a premium for fifty cents.

Easy Methods of Fruit Growing

Editor of Green's Fruit Grower:—The novice, whose mind is set on strawberry growing, gets the life almost scared out of him by the time he has digested the numerous guides as to how the plants should or should not be set, matted row methods and single hill fads, cultivation and fertilization. He is liable to fire the books and catalogues out of the window and remark with a sigh, "This strawberry business is too much for me," and return to his little vegetable patch, when, as a matter of fact, few vegetables are as easily grown as this ruby fruit, one of the first to charm the eye and tickle the palate in the days of June.

A cherry, peach, apple or pear tree needs but little encouragement in order to make a sturdy growth. The story is told of a man who trimmed most of the roots from his one year old apple trees, chopped off the tops and planted them with a crowbar. Of course the trees grew. Currants and gooseberries, two of the hardiest and most highly esteemed northern bush fruits, will grow even amid the most discouraging surroundings and will amply repay the grower even for the most ordinary care and attention. They cling to life with a tenacity that is remarkable. Try to kill off a currant or gooseberry bush by any other method than the forceful one of rooting it out with a hoe, and one has some task before him. These instances are cited merely to show that our ordinary bush fruits and fruit trees are far from being tender plants that have to be coaxed and nursed along.

The writer of this article is very partial to one of the finest and most profitable of bush fruits—the raspberry, yet authorities on the culture of this fruit suggest the most exacting and arduous methods of cultivation in order to secure, as the impression must be gained from their writings, a satisfactory crop of berries. The details of winter protection, suggested by a recent contributor to Green's Fruit Grower, would be sufficient to make the stoutest heart quail.

I have grown raspberries of many blackcap and red varieties in the mountainous districts of Pennsylvania where winter temperatures frequently drop to 10 and 20 degrees below zero and have never sustained losses of more than a trivial nature. The raspberry is one of the hardiest northern fruits grown, yet we are told almost invariably by writers on the subject, that winter protection is a necessity and that in order to save the plants, a most painstaking and arduous task faces the grower when winter sets in. He must remove the earth



In the above illustration our artist has represented Green's Fruit Grower in his Hint and Help introducing McIntosh Red apples to the head of the family. The man who represents the head of the family does not seem to extend his hand very cordially to Mr. McIntosh, which illustrates the fact that the average citizen is slow in welcoming a new variety of fruit. McIntosh Red is not a very new variety. It has been well tested in many parts of this great country, where it is almost universally a success, but it is new to many people and yet probably is looked upon somewhat with suspicion, simply because it is comparatively new. But the public should be willing to welcome warmly and with enthusiasm valuable new fruits or promising new fruits, for the reason that one new improved apple or pear, peach, strawberry or raspberry, may add millions upon millions to the wealth of this country and in addition add to the welfare and happiness of millions of people, through larger yields or more beautiful color or more tender and delicious quality.

from one side of the plant, push them over, and cover the vines with the earth, straw or some other mulch of sufficient thickness and weight to hold the brambles to the ground. To the person contemplating the planting of even a half-acre of raspberries this yearly task would be sufficient to discourage him from ever making the attempt to become a raspberry grower.

I have observed many raspberry plantations in districts even farther north than my own and have yet to see the first one where this method was pursued, yet fruit journals allow the statements to appear time after time without even the suggestion that it might be possible to winter a raspberry bush the same as a barberry or a quince tree. I doubt very much whether this costly and arduous method of winter protection is practiced at Green's farms.

My raspberries—and I am growing the Cumberland, Gregg and Souhegan of the blackcaps, and the King and

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St. Regis of the reds—have never known any winter protection other than a coating of manure applied in the fall and a few corn stalks or other heavy mulch. I have never lost a plant by freezing. Last winter, a most severe one, I left two good sized rows without any covering whatever. True the plants were heaved up somewhat by the alternate thawings and freezings, but when spring opened I tramped the roots back in the ground and the bushes bore me enormous crops. I did not lose a single plant by freezing.

There may be tender varieties of raspberries that require winter protection, but the wise grower will eliminate these sorts and select the hardier one. I believe varieties like the Cumberland, Plum Farmer, Souhegan, King and Cuthbert will thrive in any northern climate from Maine to Washington without winter killing and without the methods of protection as advised by so many writers. Undoubtedly there is great merit in proper mulching, but there is no more necessity in spending an entire fall "laying-down" a raspberry plantation than there would be in pursuing the same methods with a row of apple trees.

I hope hundreds of Fruit Grower readers will take heart and plant a row or two of blackcaps through their garden or in their orchard, if they have not already done so, and that they will not be discouraged from so doing by the exacting rules and suggestions of many writers regarding their care and protection.—V. King Pifer, Pa.

Addition to Article on "Soil on Southern Hill Slopes"

Written for Green's Fruit Grower by
LAWRENCE C. DAVIS

A great many of the chemicals which go to make up a productive soil are abundant in rock. This is especially true of limestone and that form of granite known as feldspar.

Mother Nature is equipped with a powerful agency for increasing the fertility of the soil; water soaks into the little cracks and crevices of the exposed rocks; when it freezes a tremendous force is exercised upon them, causing them to crumble or decay. As this process is carried on from year to year, they are at last reduced to a form commonly spoken of as soluble. They are then in a condition to furnish a valuable supply of plant food. This process of releasing or unlocking plant food from the rocks where it has been stored for ages is more rapid on the southern slope of a hill than on a northern slope, simply because it freezes and thaws more often on a southern slope.

We would naturally suppose that the southern slope would be more fertile, all other things being equal, but the trouble is with a great many southern slopes all other things are not equal. As has already been suggested by Mr. Flesner, the soil is often carried by prevailing winds from the southern slope and dropped on the opposite side of the crest; and then again the rich gift which Mother Nature has unlocked from the rocks on the southern slope is often carried away by water when the ground thaws out in the spring. On the southern slope it is allowed to run off quickly, while on the northern slope it thaws out more slowly and thus less fertility is carried away.

A southern slope is especially in need of protection by a heavy grass crop. My advice would be, keep all hill-sides in grass as much as possible—in the long run grass is the most profitable on a hillside.

(Note by Editor.—The growth and decay of grass and weeds are a source of soil fertility. Since more grass and weeds grow on southern slopes than on northern slopes, this should be considered.—C. A. Green.)

Orchard Notes

Get ready to do some grafting this year.

Every home needs a strawberry bed as much as a garden.

Are the rabbits and mice skinning your young trees? The lime-sulphur solutions are most effective in February and March.

Trees badly infested with scale should be sprayed twice during the winter.

An ideal spray day is a quiet, bright one, when the air is dry and cool.

At any time during winter the pruning of gooseberries and currants may be proceeded with.

Of all the year, now is the best time to return as manure a part of the fertility that has been taken from the soil the past year or years.

Begin early in the life of the orchard trees to develop low-headed growths by pruning back the tops. Such trees will occupy less orchard space, be less liable to damage by high winds, and be much easier to pick fruit from than from those of high, spindling growth.

Before spraying any kind of trees there should be thorough pruning, for every limb cut off represents a saving of that much surface. Thick tops should be thinned out to admit the sun to all the fruit, and long limbs shortened back.

By the Open Fireplace

We are all more or less sentimental. The person without sentiment is like a field barren of verdure on which there are no dewdrops or flowing stream or flowers.

The glare of the noonday sun does not lend sentiment to our thoughts or to the scene, but the moonlight does add something, likewise the big fireplace partially lighting the room adds charming sentiment.

If we have vivid imagination we see images in the glowing brands of coals. Among these images are the faces of departed friends.



In the dull glow of the fireplace, our thoughts revert back to the days of childhood and maturing years, and of manhood or of womanhood, or leap over the bounds of the future so that we may have a glance at the successes, or possible failures, of the coming years.

What a pity that there are so many homes without open fireplaces, for they are both practical and aesthetic. Many homes have no means of ventilation such as the open fireplace provides. At all times the fireplace is a ventilator, but particularly is it so when the fire is burning and a draft is flowing up the chimney.

The building of open fireplaces is an art which the modern architect is often incapable of achieving. He is probably too stingy of space. He does not make the fireplace deep enough, and he makes the throat about the andirons too contracted. In the old fashioned fireplaces, which warmed our forefathers, and which still exist in many rural localities in the eastern states, there is a big recess where the coals burn and the throat of the chimney is large enough for even a fat man to crawl up and escape through the opening at the top upon the roof.

Bunch of Grapes Grown on Hickory Tree

What is considered one of the most remarkable freaks ever produced in Worth County, Mo., was discovered when a fine bunch of wild grapes was found growing on a hickory tree. The vines were firmly attached to the hickory limb, where the grapes had grown to full maturity. The grapes had the same flavor as those grown on a nearby vine.

I have known a gooseberry bush to grow in the crotch of a big elm tree.—C. A. G.

Stock Taking Cold

The horse is very susceptible to cold; and the horses that are stabled when not being worked or exercised feel the changes of weather quite as readily as do those enjoying a more free life. All stables should be fairly lofty, because horses need plenty of fresh air, and this can only be properly given during intense cold when ventilation can be given above the heads of the animal so far as elevation is concerned, the position of the ventilators mattering little so long as they are at a good height and placed with judgment. The stable should feel cosy upon going in, but not stuffy, otherwise the horses will feel chilly upon coming out.

When the horses are out at work they need little care, so long as they are actually employed, but if being rested, or doing duty that involves periods of inaction, it then becomes necessary to see that there is no chance given for a chill to be caught. If to stand for several minutes,

as when a wagon is being loaded, a loin-cloth, or sheet, should be thrown across the back and removed when actual work recommences, and the same plan should be followed until the cold breaks.

Cows do not feel the cold so much as do horses, but, for all that, they do feel it. Perhaps one of the most noticeable features as regards cows during cold is the increased amount of food that the animals will consume.

Yes, Editors and Others May Publish Articles Clipped from Green's Fruit Grower

Letters are received asking permission to reprint articles appearing in Green's Fruit Grower. In reply I will say that publishers are welcome to clip and republish, provided they give Green's Fruit Grower full credit. Our aim is to promote a general knowledge of fruit growing and to encourage judicious planting of both small and large fruits for home supply more particularly than anything else. We consider the main object of a magazine like Green's Fruit Grower is to induce the rural resident, the villager, or even the city man with a small lot, to plant upon his place the raspberry, blackberry, currant, grape, apple, peach, pear, plum, quince and cherry for a home supply to meet the wants of his own table, more particularly than to induce commercial planting of orchards. There is not likely to be a scarcity of commercial orchards, for business men, men with capital, do not need arguments to persuade them to plant orchards. They see that for themselves. But there are hundreds of thousands of intelligent people in every township, county and state who have no home supply of the strawberry or even the apple. It is this class that we desire to reach and influence, hence our offer permitting clippings from Green's Fruit Grower.

The Pear and How to Grow It

Bulletin by G. B. Bracket, U. S. Pomologist

The pear has long been regarded as one of the most luscious of the many kinds of fruit brought under cultivation. The choice varieties excel most apples in rich, juicy texture and delicacy of flavor, and for both dessert and culinary purposes, either canned or in the fresh state, the pear is considered a great acquisition. With a proper selection of varieties and with careful handling and storing of the fruit, its season of use may be extended from midsummer to late winter without resorting to artificial means of preservation.

Pear trees are more difficult to maintain in a healthy, productive condition than apple trees and cannot be grown with the same degree of success over so wide an area of country. Such has been the uncertainty of success in growing pears in many parts of the United States that few farmers have the needed confidence to plant even the few trees necessary to provide fruit for home use. This lack of confidence too often leads to neglect, which in many instances becomes the prime cause of ultimate failure.

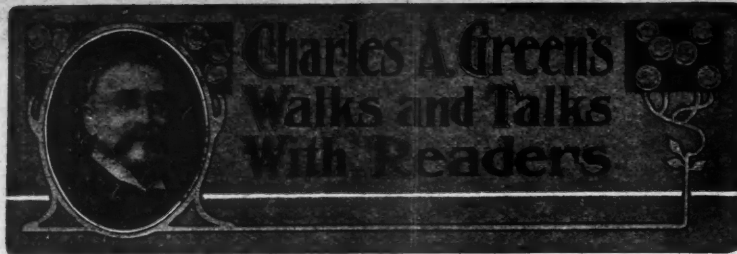
The information in this bulletin is based on practical experience and should bring success to the planter in any locality where the pear flourishes. By following these details the farmer will be enabled to grow enough choice fruit to supply his own family; and if he should wish to extend his planting for market purposes, he will find a ready sale for his surplus crop. With these objects in view, care should be given to the selection of varieties.

The Wagener Apple

This variety is known for its early productiveness and lack of vigorous growth; the tree rarely attains any great size, says Michigan Farmer. For these reasons it is considered one of the best winter varieties to be used for filler purposes in the orchard. While it is a variety which belongs to the Spy type of apple it is the antithesis of that variety in respect to growth, longevity, and early productiveness, and needs just the opposite in the selection of soil conditions and treatment in pruning.

On light soils this variety often makes stunted growth and overbears. Therefore it should be put on the heavier apple soils to encourage the production of wood growth instead of forming fruit spurs. Also, the pruning should consist more of cutting out the spurs which contain the fruit spurs than the larger limbs.

Well grown this variety is very good for both dessert and culinary purposes. Its color and general appearance also make it appeal to the eye, which is an important factor in marketing fruit. Probably because it is so freely set on account of its early productiveness, it brings a price about that of the Baldwin and sometimes a shade lower. The fact that it often bears fruit small in size undoubtedly has something to do with the price received on the market. In storage it does not keep as well as many other varieties; February being about the limit in cold storage. It is very likely to scald and after scalding it goes down fast.



Charles A. Green's Walks and Talks with Readers

Muck Land—This country seems to be awakening to the value of muck land. Whereas in former years these lands have been considered waste lands occupied by straggling trees, stumps, weeds and rubbish of all kinds, now they are being cleared, drained and turned into the most profitable farm lands. Whereas formerly these muck lands were made no use of and were not considered of any particular value, now an acre of good muck land is as valuable as four or five acres of upland. While the muck lands are valuable for farming purposes for growing corn, potatoes, rye and hay, they are far more valuable for the production of celery, cabbage, onions and other garden crops.

Painting Fruit Trees

I am surprised to find notable men from the experimental station and others recommending the painting of fruit trees. These men reason that the ingredients for the painting must be pure and that the oil must be raw linseed oil, but this is not sufficient, for it should be well known that there are few paints at the present date that are pure. It is scarcely possible to buy linseed oil either raw or boiled that is really pure. Such oil often has fish oil mixed with it to adulterate it.

I do not advise any reader of Green's Fruit Grower to paint his fruit trees, or to apply paint to fruit trees, except further than to paint over the stubs where large branches have been removed. I am opposed to putting any kind of paint, tar or any similar substance upon the bodies or branches of fruit trees. It may be done in some instances without loss but then again it may result in killing every tree to which it is applied, as I have known to occur.

Lawrence Pear

This is known as a late winter pear. I have just brought up from my fruit cellar a basket of Lawrence, December 7th. These pears have ripened slowly in my fruit cellar. For two months they have assumed a beautiful golden color, looking as though they were fully ripe but they have not softened until the present date. Previous to this date I have been eating the Anjou pear, which is known as an early winter pear, so you see that the Lawrence fits in well with the succession after Anjou.

I consider Lawrence of higher flavor than the Anjous which I have grown this year, but bear in mind that next year I may change my mind in regard to the quality of these two popular winter varieties, for varieties do change in quality in different seasons. Lawrence is not quite so large a pear as the Anjou as ordinarily grown. The Lawrence resembles the Anjou somewhat in shape but is not quite so plump and round as the Anjou but is more pyriform.

The Lawrence pear is not commonly met with in the markets of the great cities, nor is it commonly found in the orchards of the farmer and fruit grower. It is a good grower, throwing its branches upright. With us it does not bear fruit so early as Anjou, Bartlett or Clapp's. I consider no collection of pears complete without a few trees of the Lawrence.

Watch Your Fruit Trees for New or Strange Insect Pests

In order to be a successful fruit grower you must have some knowledge of well known insects. You should know how the eggs of the tent caterpillar look so as to distinguish them from the eggs of other insects. This caterpillar lays its whitish eggs around a small branch, the eggs being glued together in a mass. If you find in your orchards a strange insect or strange looking eggs deposited upon the foliage or branches, or if you see the insect itself and can not identify it, you should send specimens of the insect or eggs to your state experiment station or

to the agricultural department at Washington. By prompt action along these lines you may save not only your own orchard but those of your neighbors from serious pests.

A new insect called the brown tailed moth has secured a foothold in some of the eastern states. Its eggs are placed in a cluster on the under side of the leaf. The moth itself is pure white excepting its tail which is brown. Particles of its covering, the hairy portion, when it comes in contact with the skin of human beings makes aggravating sores and sometimes results in sickness. While it is possible for this insect to appear in other states, it is not likely at present, but our readers should be informed in regard to its appearance and habits so as to identify it should it ever appear.

quality and the trees have borne heavy crops.

Not far from this group of old cherry trees a deep well has been sunk but is now stoned over and not used. This well furnishes perfect drainage. Possibly this old well has something to do with the productiveness and vigor of these old trees. I have noticed that cherry trees do not thrive at their best or produce superior fruit on soil that is poorly drained.

The cherry is a remarkable fruit in more ways than one. It is possessed of great beauty not only in the tree itself and its blossoms but more particularly in its beautifully tinted fruit. The yield of cherries is something marvelous, five to ten bushels often being taken from one tree. By planting the different varieties you can have cherries to eat and to can during a period of two months. Any individual who has fifty cents or less and ground on which to plant a cherry tree need never lack for this enticing fruit.

The Fatal Letter

Letters are common things. They are so numerous they tax the largest post offices and fill trainloads of cars daily. Many of these letters are trivial but some are tragic. Think of the man who returns home after a long journey and finds a letter awaiting him stating that his wife

All Birds Are Helpful to Farmers and Fruit Growers

Our state experimental station and the agricultural department at Washington are giving each year more attention to the study of birds in their relation to the farmers and fruit growers. It is conceded now by every intelligent observer that all of our birds are helpful. In past years we considered the hawk, the owl, and the sparrow and a few other birds predacious and not helpful, but more careful study has convinced us, who are interested in birds, that even these outcasts of the bird family should be preserved.

When a wise man who had spent much time in studying bird life in connection to the destruction of insects stated that man could not long exist on the earth if the birds were entirely destroyed, owing to the fact that insects would ravage the country and eat every green thing, most people thought this statement was an exaggeration, but now his words have proved to be true, for who can estimate the number of insects, which can only be measured in carloads or trainloads, consumed each day over this vast country by the birds? Then when you consider that one insect may increase into thousands or tens of thousands in a few days, you have an appalling condition of things, if our defenders the industrious birds, which I have called our unpaid police force, are



Here is the photograph of the pecan nut tree grove of Samuel H. James, of Louisiana, who is a pioneer nut grower. When he planted these large beautiful trees nut growing in this country was in its infancy or scarcely dreamed of. Recently twenty western editors visited this grove. Dr. Howard, National Entomologist, said that these trees reminded him of some grand park in Europe. Mr. James supplies many of the wealthiest and most distinguished men and women of the United States with their eating pecans. Mrs. Woodrow Wilson having been his patron for several years. As is the case with varieties of apples, the better varieties being unknown to most Americans, the same is true of pecans. \$9,000,000 of our population never ate a good pecan and know of this nut only by the inferior wild specimens which are usually sold by our grocers. The improved pecan is thin shelled and thick meaty, a most delicious morsel. Prof. H. E. Van Deman has under his care 1000 acres devoted to a large pecan plantation in Louisiana.

The Productive Cherry

I know of no fruit tree which bears so regularly every year as the cherry. When I bought my Rochester home I was told by the former owner that the six Black Tartarian trees which ever grouped upon the lawn had not failed to bear fruit abundantly for the past fifty years. I have lived on this place twenty-four years and have not discovered any season when these old cherry trees have not borne fruit abundantly. This a remarkable record. Perhaps other readers of Green's Fruit Grower can tell of similar productive trees in their locality. If so, we should be glad to hear from them.

These old trees which have borne fruit so long upon the grounds near my house correspond closely to the Black Tartarian. The fruit will remain upon the trees for a month after they are ready to pick, which has led us to suspect that they may be a variation of the Black Tartarian. These old trees have received no cultivation and yet the cherries are large and of superior

has left with a handsomer man never to return.

I have in mind a letter, received by a man who considered himself in prosperous circumstances, conveying the intelligence that everything was lost in a risky investment which was supposed to be substantial and desirable. Consider the shock that comes to us with a letter telling of the sudden death of a near friend. The most tragic letter of my life was that from a young girl who wrote that she has something painful to communicate to me asking me to call at a certain hour to receive the fateful message. My suspicion was correct, the girl was to announce to me the fact that she would break her engagement to marry me and accept the hand and fortune of a millionaire, for whom she had no love. As long as the present war, the greatest in history, lasts, well may the hands of the sister or mother tremble as she opens each letter, fearing the announcement of death in battle of some loved one.

utterly destroyed.

The added interest taken in bird life recently, owing to their helpfulness to farmers, is shown by the fact that wealthy men and women have donated large sums of money for the purpose of purchasing many thousands of acres to be used as bird reservations where no bird is allowed to be killed at any time of the year.

There are now over fifty of these bird reservations in various parts of the country. Every farmer should make his farm a bird reservation allowing no one to slaughter, molest or make afraid his bird friends so far as his jurisdiction goes, that is, to the extent of land he occupies.

The Romance of Farm Life

There is something romantic and poetic in connection with farm life. In many respects it is the ideal life, but those who take up farming from the romantic or poetic side are soon dispelled of their delusions and are taught that the life of

the farmer which large

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I am led to subject by have than the clerks, managers and others with the idea on the farm or of which except such in the various make more better health of these inquiries

feel myself infinitely, I suggest if you are where you farming is as house building and that far learned in a farm who had not fully appreciated farming is a big thing to be successful farmer today about one-half should exist practiced.

The This is of problems which and farmer of shall the fruit best market find I find a huge crops where I where to find ducts. Sales have been of the worker of the sells his product he should. So oats and other earned the fact fixing the price fix the price that our local \$1.00 per bushel western farmer be getting \$1.

The man with berries and compelled to how to place him in the most a to get profits will find the fruit and more successful average farmer

United States Fruit Growers Our government culture, realizing proved methods end our government dollars each year various subjects also done by the but the authorities no way by which reach the fruit by enlisting the aid in getting publish the suggestions.

In the past bulletins have drawn out, the paper could not C. A. Green has corresponding stations and agriculture at

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the farmer is a laborious one and one in which large profits cannot be expected.

I have written much about the attractiveness of rural life in telling of my experience as a boy on the farm, and my experience after fifteen years in a city bank, going back to farm life, and how my wife and children enjoyed this rural experience, when by so doing I sometimes fear that I may lead some enthusiastic man or woman to leave a position as book-keeper, clerk or foreman in a city, hoping to better themselves on a farm without experience and with but little money. Therefore I hasten to raise a word of caution in times like these when so many appear to be dissatisfied with city life and charmed with dreams of life on the farm.

In order to make farm life ideal you should have capital. How much capital depends largely upon yourself and your wife and children and how much they are willing to sacrifice themselves for the common good financially.

I am led to express myself on this subject by having received recently more than the usual number of letters from clerks, managers, superintendents, nurses and others living in cities and obsessed with the idea that if they were only back on the farm which they left in childhood or of which they have no knowledge except such experiences as they have read in the various publications, they could make more money on the farm and enjoy better health there. My reply to many of these inquirers is that while I do not feel myself in a position to advise definitely, I suggest that the safe thing to do, if you are doing fairly well, is to stay where you are. Please remember that farming is as much a trade as carpentering, house building, plumbing, manufacturing, and that farming cannot be taught or learned in a year. The man born on a farm who has lived there all his life does not fully appreciate how much of a trade farming is and how many little things and big things the farmer must know in order to be successful even as the average farmer today is successful, which is only about one-half of the efficiency that should exist if the best methods were practiced.

The Market Problem

This is one of the most important problems which confront the fruit grower and farmer of this country today. How shall the fruit grower and farmer find the best market for his products?

I find a hundred men who can produce crops where I find one who knows how and where to find the best market for his products. Salesmanship does not seem to have been considered by the average worker of the soil. The result is he often sells his product at much less price than he should. So far as the selling of wheat, oats and other staple products is concerned the farmer has but little to say in fixing the price. The millers of Rochester fix the price of wheat and other grain so that our local farmers may receive only \$1.00 per bushel for their wheat, while western farmers for their hard wheat may be getting \$1.40.

The man who has succeeded in growing berries and also large fruits has been compelled to learn how to find a market, how to place his fruits before the purchaser in the most attractive manner, and how to get profitable prices. Therefore, you will find the fruit grower a better salesman and more successful financially than the average farmer.

United States Government Aid to Fruit Growers and Farmers

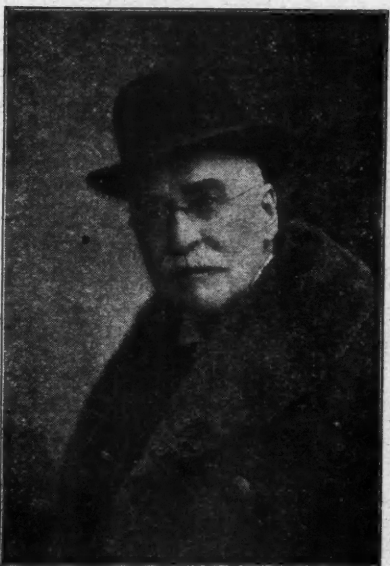
Our government desires to promote agriculture, realizing the importance of improved methods and big crops. To this end our government spends millions of dollars each year in printing bulletins on various subjects and much of this work is also done by the state experiment stations, but the authorities concede that there is no way by which they can so successfully reach the fruit growing farmer as they can by enlisting the aid of farm publications and in getting the farm publications to publish the substance of their reports and suggestions.

In the past the government and state bulletins have been so lengthy, so long drawn out, that the editor of the farm paper could not find room for them. Our C. A. Green has for a year or more been corresponding with the state experiment stations and with the department of agriculture at Washington, urging the

men in charge to issue condensed statements printed only on one side of the sheet of paper so that the items may be easily clipped and published by the busy editors scattered all over this country.

In reply to one of these letters the Hon. D. F. Houston, secretary of agriculture, writes us that he has read with deep interest the suggestions made and that the department is now endeavoring to supply editors of agricultural papers with summaries or brief statements more suitable for publication by magazines of large circulation, which could not possibly find room for longer articles.

Where under the old and lengthy method of presenting information to farmers the government by sending bulletins, etc., direct to farmers reached one interested individual, by the condensed method suggested by the editor of Green's Fruit Grower the information would reach hundreds of thousands.



CHARLES A. GREEN, Editor.

Can a Home Supply of Fruits be Grown Easily?

My answer is, Yes. It does not require a professional fruit grower to grow in the home garden a supply of strawberries, raspberries, blackberries, currants, gooseberries, apples, peaches, pears, plums, cherries, quinces and grapes.

This reply is necessary, for at this period so much professional advice is given at horticultural meetings and in the horticultural publications and the bulletins of experimental stations regarding the planting, pruning, spraying and all the paraphernalia that goes with commercial fruit growing.

Here is the point I am trying to get at, which is that while commercial fruit growing, commercial orcharding, requires thought, consideration and skillful management, any man or woman who is capable of growing farm crops can succeed in growing a supply of fruit for home consumption without being skilled in pruning, spraying and other features.

I am of the opinion that thousands of good people are deterred each year from planting a few grape vines, peach trees, cherry trees, apple trees, or berry plants by reading the numerous technicalities set forth by professional fruit growers as to where to plant, when to plant, how to plant, how to prune, how to spray and how to do numerous other things, whereas all the planter has to do to make a grape vine live is to dig a little hole 15 inches deep in the garden, put in the roots and cover up the roots in that hole and press the earth down firmly with the foot, and the grape vine will grow, and it is the same with trees. It needs no book to tell a man how to plant these things for a home supply.

I consider the strawberry plant and the tip plants used in transplanting black raspberries as the most difficult to transplant. If strawberry plants are set too deeply the crowns tend to rot. And if not set deep enough the plants are liable to dry out and perish. But if the planter will examine one of these plants growing in the garden he can decide for himself how deep or how shallow it should be planted. While I consider strawberry

plants so much more difficult to transplant than other items, or than trees, I have known strawberry plants to be thrown up by the cultivator, a little dirt being accidentally thrown over a portion of the roots, and yet such strawberry plants have grown and borne fruit, but I would not advise planting strawberries in this way.

I have no objections to our readers getting all the points they can from books and publications on how to plant, how to prune and how to grow fruit. What I desire is that no one should be deterred from planting a home supply of small and large fruits by the thought that they must have professional ability or secure a professional man to do the work.

Idleness

If you are seeking the shortest road to poverty I can assure you that its name is Idleness. It is difficult to realize how many idle men there are in every city, in every county, in every state of this great productive country. I cannot help observing that where a few industrious men are engaged in digging a sewer or excavating deep into the earth or rock for the foundation of a big city block or other similar work, crowds of idle men gather about gaping for hours at these industrious workers.

What is it that attracts these idlers who are strong, able-bodied men of middle life or younger? It must be that work is essentially of interest to mankind, and yet why is it that so many shirk work and spend weeks, months and often years in idleness, accepting the most frivolous excuse for not accepting a job that is offered.

On one occasion I sent word to a rescue mission that I wanted five or six more men. After some delay a number of men came all together to my place stating that they had come to learn what I had to offer them. These men did not look as though they were accustomed to much work. They were not dressed as workmen. They were particular to inquire into all of the terms and hours and every condition affecting the job. Finally the spokesman asked how often the men were paid. I told him they were paid every Saturday night. He said that he and his companions would not engage with me unless I would pay them every night. This I declined to do for obvious reasons. Then every man left without further comment. The fact is these men were not anxious to get work. No man can expect to be successful who is not anxious to be successful.

Orchard Hints

Written for Green's Fruit Grower by Arthur C. Melvin

When removing a large limb, always make two cuts, or the weight may make an ugly wound in the body of the tree. The second cut can be made without any danger of splitting.

It is false economy to purchase cheap trees and plants. Do not be tempted by a low price, unless there is a good reputation behind it. Be sure of true-to-name and first-class stock, no matter what the cost. It saves in the end.

Here is a hint that is of great importance to beginners. Make sure that you are selecting varieties adapted to your soil. It will pay to consult an authority on the subject, rather than waste money and years in experimenting.

All the secrets of fruit growing are open ones. The way to success is clear to anyone who will enlighten himself and labor hard. Nearly all the failures are due to neglect of these two essential points.

The parcel post has opened up an efficient and inexpensive way for rural residents to remember their distant friends. Some glasses of jelly or a few choice apples are always acceptable. Don't forget the shut-ins and invalids.

An apple orchard situated upon a hill has many advantages. There is less danger from late spring frosts, and there are bound to be good natural water and air drainage. The trees will receive plenty of sunlight, thereby favoring the perfect ripening of the fruit.

An excellent way to keep the young folks on the farm and to encourage real business principles, is to give them a few fruit trees for their own, with the understanding that they are to assume all care and pocket all proceeds. My, how they will read the magazines and books for information!

The writer knew a man who made lots of money during the grafting season by doing work for others. He was an expert and his services were in demand far and near. If you know any detail of the fruit growing business well, people are sure to be after your services.

No matter whether a man owns one tree or a large orchard he needs at least one good paper devoted to fruit-growing interests. Any reliable publication will help solve the problems that are bound to arise, and will be a source of profit. Keep them on the reading table, and soon the whole family will develop a growing interest.

The Masterful Man

Nearly all women love the masterful man.

He has a high-handed way of doing well. Woman, in her soul, despises the man whom she can manage.

She does not manage the masterful man; he manages her, and the result is she respects and adores him.

He is not a bully, he can be as gentle as he is forceful, and the very fact that gentleness underlies his strength makes her love him, says the Philadelphia Bulletin.

He has a way of saying "you must not do that, it's not good for you," or "I can't let you do this," that wins her interest at once.

When he wants to see her he thrusts aside every obstacle. Everything and every person will be sacrificed for her sake.

His methods may seem selfish to the world in general, but to the woman herself they are infinitely flattering.

He is a bold wooer, and he wins.

Women have been known to love timid men, but the love is more maternal and protective than wifely.

The masterful man sweeps all before him; his strenuous wooing carries a woman along on a tide that she is powerless to resist.

She may make a feeble pretense at rebellion, but in her heart she knows that her surrender is but a matter of time.

If he does not succeed in his first attempt to win her, he is not discouraged, but keeps at it.

He never lets her forget him.

He treats her as a child, but he makes love to her as a woman.

He understands her thoroughly, and rarely strikes a false note.

He makes her feel that everything on earth is subservient to her wish, that he will move heaven and earth to please her.

KNOW NOW

And Will Never Forget the Experience

The coffee drinker who has suffered and then been completely relieved by changing from coffee to Postum knows something valuable. There's no doubt about it.

"I learned the truth about coffee in a peculiar way," says a California woman. "My husband who has, for years, been of a bilious temperament decided to leave off coffee and give Postum a trial, and as I did not want the trouble of making two beverages for meals I concluded to try Postum, too. The results have been that while my husband has been greatly benefited, I have myself received even greater benefit."

"When I began to drink Postum I was thin in flesh and very nervous. Now I actually weigh 16 pounds more than I did at that time and I am stronger physically and in my nerves, while husband is free from all his ails."

"We have learned our little lesson about coffee and we know something about Postum, too, for we have used Postum now steadily for the last three years and we shall continue to do so."

"We have no more use for coffee—the drug drink. We prefer Postum and health."

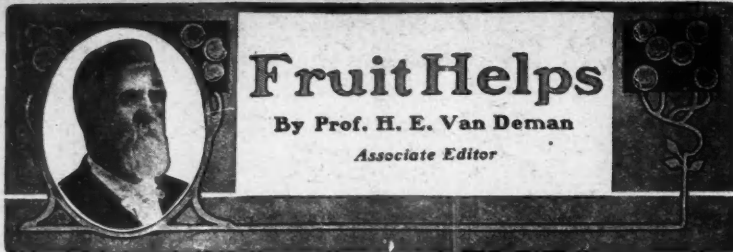
Name given by Postum Co., Battle Creek, Mich. Read "The Road to Wellville," in pkgs.

Postum comes in two forms: Regular Postum—must be well boiled. 15c. and 25c. packages.

Instant Postum—is a soluble powder. A teaspoonful dissolves quickly in a cup of hot water and, with cream and sugar, makes a delicious beverage instantly. 30c. and 50c. tins.

The cost per cup of both kinds is about the same.

"There's a Reason" for Postum.
—sold by Grocers.



Fruit Helps

By Prof. H. E. Van Deman

Associate Editor

Improvement of the Indiana Apple Shows

The far western states, being so far from the great fruit markets of this country and Europe, have from necessity been obliged to prepare their fruits for market in the best possible manner. This they have done very successfully and to such a degree that their fruit growers have far excelled eastern competitors in net profits in their own markets. Notwithstanding the big apple crop of the country this year, the Boston market quotes good R. I. Greening apples at \$2.00 to \$4.00 per barrel, and western packed apples in bushel boxes at the same price. This is three times as much in price for the western apples for the same quantity. Why is this difference? It is because of the superior grading, packing, attractiveness and confidence that the buyers have in the fruit being alike from top to bottom of boxes.

By slow degrees some of the eastern fruit growers have come to realize the necessity of careful grading and honest packing of their fruit if they are to successfully compete with the western growers. The apple growers of Indiana have felt this quite keenly and for four years past have held annual apple shows, for the purpose of getting into line with the best methods of marketing their apples. They have tried to learn how to grade and pack their best apples in boxes. They have not given up the barrel by any means and no doubt this will always be used for the ordinary grades. It has been my privilege and duty to judge the first two and the last of these shows. The first one was no doubt made from as determined a spirit to succeed as any of the later ones, but it was really a very crude effort. This was not surprising because the apple growers had no experience in skillful grading and packing in boxes. The barrels were packed much better. The same was true of the single plate exhibits. Of the box exhibits there were very few that were at all creditable. It was not the fault of the fruit, but of the lack of knowledge of those handling it.

The second apple show was a marked improvement over the first one. From the start I tried to instruct the exhibitors as far as I could, in the proper way to grade and pack in boxes, by inviting them to be present and see me examine the fruit to see wherein their faults lay. I allowed them to ask questions during the course of judging, that all points might be clearly understood by them. This might have been a dangerous way in which to make decisions and awards among competitors for prizes, but there was little dissatisfaction as far as I know. They saw the reasons of failure and success and were enabled to correct them in the future. There were scarcely any of the box exhibits in this second show that was not creditable in a western apple show, where the character of the exhibits is the best in the country.

The third show which was held last year I did not judge, but was told that it showed improvement over the second one. The fourth show was held at Indianapolis the last week of November and was a very good show. I noticed at once on entrance to the spacious hall that the exhibitors had made decided progress. They decided not to show apples in barrels, but concentrated their efforts on grading and packing standard boxes of which they were capable. There were many new exhibitors making their first efforts in this work and they did very well. Some of the more experienced exhibitors made displays that were excellent. All of them were allowed to be present while the judging was going on. Everything was criticised and records made by established score cards. The fruit was very perfect and free from codling moth and few evidences of San Jose scale or other insects. Very few signs of scab or other fungi were found. It was evident that spraying and proper

care of the orchard had not been neglected. There was scarcely evidence of attempts at deception among the exhibitors by putting best fruit on top of boxes. My plan in judging is to have a table large enough to allow the fruit to be spread out, as it is to be properly examined and judged. The upper layer of apples are placed on one end of table, and on the other end three from the other layers down to the bottom of the box. In this way the whole box can be compared quite easily. If there is any difference between the upper and lower tiers in color, size, or otherwise, deduction is made in score and penalty is doubled for the same. The value of these shows lies in the stimulus they give to the growers to raise better fruit and pack and grade more carefully. If they profit by them and do better work in a practical and careful way, the apple shows are a great benefit.—H. E. Van Deman.

The Melon Apple

There are some very worthy varieties of apples and other fruits that have been known more or less for many years and yet are almost entirely neglected. They are really overlooked, and in most cases because they are unattractive when compared with those of more brilliant color and larger size. Among these really valuable apples is Melon, often called Norton's Melon and Early Melon. It is not above medium size but averages well with other apples in this respect. The shape is oblate-conic. The color is yellow with dull red stripes and splashes, and over this considerable russet, that is in irregular flecks and patches that give the surface a marbled appearance. The flavor is rich, subacid, very agreeable and satisfying and the flesh is fine grained and juicy. The season is late fall and early winter in most sections. There is no variety better suited for home use as an eating apple, but is not attractive in market.—H. E. Van Deman.

Note by C. A. Green: At Green's Fruit Farm, Melon apple is a winter variety. At this date, January 25th, I am eating it and find it in splendid condition. It is a handsome apple here. It is my favorite. It is an annual bearer, and very productive, probably not a strong grower in nursery.

Answers to Inquiries

Reply to Mr. Tomblinson: I have had no experience with the raspberry trouble you speak of. It is possible that the spray you have applied has injured the foliage. While the leaves of plants and trees must be sprayed at times, I always consider that it is a possibility that the spray may injure the foliage, something that you have intimated. But it is probable that the trouble is a bacterial or fungous ailment. It may yield to preventive spraying with Bordeaux mixture or something else. The specimen and your letter are sent to Washington, D. C., for expert examinations and response. The Cuthbert and other varieties of the raspberry are affected by such diseases.

Mr. H. O. Peters, Shirley, Hancock Co., Ind., asks the question, does the sap of a tree go down into the roots in the fall, and in the spring circulate up through the tree?

Reply: It is an old and mistaken idea with some people that the sap leaves the trunk and branches of a tree in the fall and goes down into the roots and stays there until springtime, when it courses up again. Now there is sap in all parts of a tree, above and below ground, both winter and summer. In the growing season it is more abundant than in the fall and winter when there is less need for it. The leaves evaporate vast quantities

of water from the time they start to grow until they ripen at the close of their season of usefulness. This water is taken into the circulation of the sap constantly and just as it is needed and passes to the remotest leaf. A part of it passes out into the air just as some of the moisture of our bodies does from the lungs. The portions of plant food in the sap go to form wood, bark, fruit, seeds, etc. There is little extra moisture needed in the dormant season, but there is some evaporation going on through the tender bark of the twigs, especially in very cold, dry weather. This must be replenished from the water in the soil, and the roots take up whatever is needed unless the supply is not good. Then injury follows and we call it "winter killing," which is sometimes very serious. There are great differences in the abilities of different trees and plants to endure these severe spells of winter drouth and cold and we need to know about them and act accordingly. This is where knowledge of the life history of all that we grow is important. Moist but not water-soaked soils are suitable for the roots of almost all kinds of fruits the year around and we should try to furnish such conditions. Mulching is a great help.

Prof. H. E. Van Deman, Dear Sir: I read with much interest your article on nut culture in the December number of the Fruit Grower. Under separate cover I send you sample of nut I think is the "Shellbark" you refer to and which are native to the Appalachian range. You refer to them as Northern nuts. They used to be plentiful here, but, as you say, they are fast disappearing through wood choppers. Your advice is timely and good for my choice no nut surpasses the "little Shagbark." I wish to ask: What is the earliest Black-cap raspberry? Catalogues are confusing. For example: One apparent good authority lists Kansas as the earliest while an equally good authority puts Kansas as late. No catalogue I get, except J. W. Jones, of Allen, Md., is emphatic and he says Kansas is the earliest.—Oliver Taylor, Box 446, Bristol, Tenn.

Reply: The nuts have been cracked and carefully tested by me, and although the flavor of the kernels is good, the meats are too difficult to get out. Compared with really good hickory nuts, none of the three kinds is of special value. The two smaller ones are of the true Shagbark species, which is the one to which the best hickory nuts belong, but there are many kinds that are larger, thin shelled and when cracked the kernels come out very easily and often in perfect halves. I have never seen any very good hickory nuts in the southern states, but from Ohio to Michigan and New England there are many very fine varieties growing. Those who wish to grow this nut should get the nuts or trees from the best stock obtainable. A few nurseries are now propagating some of the choice varieties by grafting and budding and should let the public know where to get the trees for planting.

Kansas is a very early blackcap raspberry and so is Palmer.

Prof. Van Deman:—Does snow covering the earth enrich the soil? Is it the poor man's manure, as is sometimes claimed? How does it differ from showers of rain during summer as regards adding fertility to the soil?

Reply: It is said that snow carries with it small amounts of nitrogen and when it melts this is passed into the soil with the water. If so it is that much fertility that is available for plant food. But it may be that the better crops that are apt to follow heavy snow falls come from the unusual supply of moisture that is added to the soil by the melting of the large amount of snow, more than from the nitrogen that may be added.

Editor of Green's Fruit Grower:—How paying a proposition would plum culture for local markets be in the vicinity of Portland? What location or soil there would you advise and how is it valued? Please give me varieties most suitable for conditions there, their ripening seasons, age of bearing, probable yield when in full bearing and what prices usually prevail?

I should like to plant several varieties ripening in succession and would want to

plant more of the variety returning the largest profit and having the surest sale. I presume there are periods when Portland is apt to be barer of that class of local fruit and a variety ripening at such a time would be in better demand.

Please mention whether the varieties you advocate are suitable for canning, shipping, or, if not, what other disposition could be made of them in case of a glut. What acreage would that local market justify? If you know of some other western city of Oregon or California where conditions are more favorable for the success of this enterprise please apply the above questions there instead of Portland.—H. W. Currin, Oregon.

Reply: All of the states west of the Rocky mountains have large areas where plums of all kinds flourish well and Oregon is one of the best suited of all. There are many large prune orchards there and Portland and all the other cities are well supplied with the fresh fruit at reasonable prices. Anyone wanting to know what are the chances for growing plums for sale there should go to those who deal in fresh fruits and their opinion. There may be openings for good trade of this kind but I am doubtful of it. However, it would be well to try. The fruit growers who have already tried the sale of their plums and prunes in the free state would be able to give the facts that would be my main guide in deciding the question. They also know the suitability and unsuitability of the many varieties that are grown.

Editor Green's Fruit Grower:—Will you please tell me through Fruit Grower where I can procure fig trees or cuttings also pawpaw bushes? Last spring I planted two Paragon chestnut trees. Both died, but one sent up some shoots from below the surface the latter part of summer. Would these shoots produce the Paragon chestnut or would the perhaps be below the graft? Last fall I planted two more which I think will grow. Should these be cut back same as fruit trees, apple trees for instance?—Geo. W. Hayman, Pa.

Reply: It would be difficult to grow fig trees anywhere in Pennsylvania except in tubs that could be kept indoors over winter. The outside conditions would kill them, unless laid down and entirely covered with earth before any freezing weather in the fall. Plants can be bought of almost any southern nursery. The best way to get pawpaw trees or bushes is to grow them from seed where they never need transplanting. Very few nurseries have plants of this wild fruit to sell. Any friend in the southern part of Ohio or Kentucky could send fresh seeds about October, when the fruit ripens. Chestnut trees should be cut back when planted as is done with other trees. They are usually grafted above ground, and any sprouts from below the union would be from the seedling stock.

So Few Grapes

Mr. C. A. Green:—I would like to be informed why my grapes do not bear. They blossom all right but only bear from 2 or 3 to a dozen grapes in a bunch. The soil is sandy but good. Potatoes, squashes and such things do well beside them. Have one Bartlett pear tree. Can it be fruit standing alone?—Lew Clark, Mich.

Reply: It is probable that the variety of grape is one that has imperfect flowers and there is not pollen sufficient to fertilize the stigmas. If this is the case it is possible to remedy the matter by planting some ordinary variety, such as Concord, near the vines that do not bear well. But it would be quicker and surer to get them to one or more good varieties if this would bring fruit the second year if successfully done, and insure good crops. Grape grafting is done just below the surface of the ground. No waxing needed but the soil must be packed firm about the stump and to the top of the scion, leaving only one bud above ground. A Bartlett pear tree will bear fruit alone but would be more fruitful if some other variety was near it.

Mr. Chas. A. Green, Dear Sir:—Is practical to graft wild cherry stock with sweet cherry varieties? and when is the best time to do it? What month should plum trees be grafted? I have a piece of wood land with some fine young hick-

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saplings. Could they be grafted to Shagbark hickory and in what month? Can hardy English walnuts, of which I have several bearing trees, be grafted on these hickory saplings? If the hickories can not be grafted successfully, could budding be done in August with better results?

Can you tell me of any good book on propagating by grafting and budding—a book that would tell what varieties would be more likely to succeed on wild stock? I get many ideas from the magazine, but this special information I have failed to find there.

Truly yours, W. G. Corwin.

Reply: Cultivated cherry grafts or buds will not grow on the wild trees and it is a waste of effort to try it. Plum trees should be grafted early in the spring and not after growth has started, unless the scions have been kept perfectly dormant in cold storage. The earlier time is usually the best. Grafting wild hickory trees in the wild woods would not be very satisfactory, for they would be shaded badly. It is possible to graft on the good varieties but requires very exact knowledge and much skill. The foreign walnut can be grafted onto the native stocks but also requires much skill. The scions must be kept perfectly dormant and set by the bark or slip method after the stocks have started to grow.

Fruit for the Small Home

Written for Green's Fruit Grower by M. ROBERT CONOVER

FRUIT trees are affected by the condition of the subsoil to a far greater extent than vegetables, because they have need of more plant food and root-hold. Drainage and fertility of the subsoil are most urgent where fruit trees are to grow in a small space. Fruit will not always succeed where shade trees would grow well because fruit trees have a more exacting work to do, not merely foliage and wood growth to maintain, but the development of a more extensive fruitage. Peach trees and grapes are the most exacting as to drainage, but, fortunately facilities for this are usually good in the immediate vicinity of the small home.

If the trees are sprayed for insect pests, and the fruit gathered at maturity, the proximity of fruit trees and vines need not be objectionable. It is the overripe and decaying or diseased fruit which draws flies and are unsightly.

SIZE AND FORM

To be perfect in form, quality and size fruit trees need an open soil surface, at least every other season. Pear and apple trees will grow on a sodded lawn and bear

a garden. Pears may also be grown over an arbor. The chief difference in trellised or untrellised growth is in the thickness of stem or trunk or the length of branches or cane and the more direct access of light to all parts of the tree resulting in greater fruit yield in proportion to the size than with standard trees.

Pears grown on a trellis or wall are dwarfed and brought into earlier bearing by being grown upon quince stock. For trellised pears a trellis of slats of the desired form supports the growth, the arms or branches being tied to it. All buds along the arms not wanted as branches are pinched to four leaves, in early summer or as soon as they have developed enough for the leaves to be discerned. When trained against a wall English fashion, small straps are loosely fastened over the branches. Peaches are also successfully grown this way.

DWARF PEARS

Dwarfs are shorter-lived than standards but come into bearing much sooner. They will live much longer and eventually grow into standards if they are set so deep that the point of juncture with the

Or dwarf apples may be planted in between. One year old grape vines will begin bearing in the third year.

In setting the fruit trees and bushes, have the earth loose and mellow in a space at least twice as large and deep as that to be immediately occupied. Set the trees a little lower than they were in the nursery. Use no fertilizer in contact with the roots but upon the surface away from the trunk of the young tree and after it has begun growing, with the exception of undissolved bone. Old meat bones can be used below young trees and grape vines with great future advantage to the trees. Have the surface of the soil about the tree rising slightly toward its base so that water cannot settle there. Water forming ice about the trunk in winter lacerates the tender bark.

Grafting

1. When is the best time to do top grafting of cherries?
2. Will grafts of two years growth grow when cut from 10 to 15 inches long and grafted on to the ends of limbs of another tree?
3. Will cherries grow grafted on a mulberry tree?
4. Can fruit trees be crossed stone and seed?

Reply: The date for grafting varies in different states and in different seasons. All grafting should be done just before the buds on the trees begin to swell or open. The scions must not be older than last season's growth, that is you must use the newest wood there is upon the tree.

Cherry, plum and nut trees are the most difficult trees to graft. Apple and pear trees are the easiest to graft. No, you cannot cross stone and seeded fruit. That is you cannot graft peach or plum upon apple or pear.

Four Carloads of Apples for a Small Township

Gustavus H. Pieper of Mechanicsville, Iowa, writes Green's Fruit Grower that four carloads of apples were sold in his small town in Iowa, which town has a population of only 1200 people. He does not state what grade of apples were shipped in, but states that the price at which the apples were sold was \$2.50 to \$2.65 per barrel.

This reminds the editor of Green's Fruit Grower that if our readers are in doubt as to what to send to a needy family why not send a bushel or a barrel of apples? Remember that no one can starve or suffer pangs of hunger so long as they have good apples to eat.

THE DOCTOR'S WIFE Agrees With Him About Food

A trained nurse says: "In the practice of my profession I have found so many points in favor of Grape-Nuts food that I unhesitatingly recommend it to all my patients."

"It is delicate and pleasing to the palate (an essential in food for the sick) and can be adapted to all ages, being softened with milk or cream for babies or the aged when deficiency of teeth renders mastication impossible. For fever patients or those on liquid diet I find Grape-Nuts and albumen water very nourishing and refreshing."

"This recipe is my own idea and is made as follows: Soak a teaspoonful of Grape-Nuts in a glass of water for an hour, strain and serve with the beaten white of an egg and a spoonful of fruit juice for flavoring. This affords a great deal of nourishment that even the weakest stomach can assimilate without any distress."

"My husband is a physician and he uses Grape-Nuts himself and orders it many times for his patients."

"Personally I regard a dish of Grape-Nuts with fresh or stewed fruit as the ideal breakfast for anyone—well or sick."

In stomach trouble, nervous prostration, etc., a 10-day trial of Grape-Nuts will usually work wonders toward nourishing and rebuilding and in this way end the trouble. Name given by Postum Co., Battle Creek, Mich.

Look in pkgs. for the famous little book, "The Road to Wellville."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.



This interesting photograph from M. R. Conover, our regular correspondent, illustrates the attractiveness of an arbor covered with grape vines. When such an arbor is made elaborately it is called a pergola and is usually placed near the dwelling or attached to the house, but it may be detached from the house and placed in almost any part of the grounds. I would prefer it should be made of heavy timbers like the one in the photograph, but such an arbor can be made highly attractive by simply using trunks of smallish trees with the bark on for the posts, and poles cut from the woodlands for the roof, over which the grape vine is to trail. It is easy to see that such an arbor will be an attractive place for the children throughout the summer months as well as the parents and guests. All this I can say without alluding to the fruit that these grape vines may bear. The arbor for its beauty alone is well worth building, but when we come to consider that many bunches of most delicious grapes will be borne on these vines in addition to their shade and beauty, then we see that the planter and builder is doubly repaid for his work. Grape vines, costing at the nursery from 10 to 15 or 20 cents each, when trained up a trellis like that shown in the photograph would not be disposed of for a hundred dollars each. Here is a suggestion for planters. Order your grape vines now. If the soil in which these vines are to stand is not good soil, make the hole a little larger and in planting the vine fill it over the roots and fill up the hole with good soil from the garden.

Potatoes—In the last years the art of preserving the potato has been a great problem in Germany. For a long time the military authorities had offered a premium for a good method of preserving potatoes. This premium has now been withdrawn, as the question can be considered as having been solved. There are various methods of preserving them. In the first place they are being cut up in very small slices and dried, the same way as the California dried vegetables are offered in these markets. Then they have been converted into a most nutritious flour, which has heretofore been used to make cake and pastry, and this will now be added to the bread up twenty per cent.

Now, it must be understood that 80,000,000 tons of potatoes means just about a ton and a quarter per head of the German population, equivalent to about four pounds a day all the year round for each German, women and children included. This potato crop has heretofore been mostly worked into alcohol, partly for consumption in industries, partly for beverages. But there is a very determined war being conducted in Germany against alcoholic beverages, and no soldier has been permitted even a drink of beer since the first day of mobilization.

fruit of fair size and quality but it is better to have an area of cultivated soil about them to a distance of at least three feet from the tree. A tiny circle of open soil about them does nothing for the roots and often does harm if it is packed tight with manure about the base of the trunk. The feeding roots lie well out from the tree. Peach, plum, grape, cherry and the bush fruits profit by a well worked soil, although very luscious grapes may be grown over an arbor or pergola where the soil is not worked at all, but kept in sod. Grapes grown on a pergola or arbor about the kitchen door, over the garden entrance or on a post and wire trellis along a boundary will yield delicious fruit without one's missing the space occupied. Avoid any tree shade over them, as the shading of their own foliage is sufficient. Other shade favors mildew of the fruit.

The ideal place for the peach, plum, and cherry is the poultry yard. Here some shade is needed for the fowls, and the fertility of the soil favors the trees, and insect infested fruit is devoured as it falls with the larva or other forms of destructive life.

GROWING PEARS ON A TRELLIS

Growing pears upon a trellis or wall saves space where shade is not wanted in

budded stock is underground. They will later send out roots from the wood above this juncture which prolongs their life.

Dwarf pears grown in tree form are planted about eight feet apart, and dwarf apples about six feet apart if they are budded on Paradise stock, which retains the diminutive size of the tree longer than Doucin stock.

Fruit trees of normal size are planted at the following distances: Apples, 20 to 30 feet apart; pear, 20 to 25 feet apart; peach, 15 to 18 feet apart; plum, 15 feet apart; quince, 8 to 10 feet apart; cherry, 20 feet apart, at least.

Bush fruits are planted as follows: Raspberries, 3-feet apart in rows, rows 5 feet apart; blackberries, from 3 to 4 feet in row; currants and gooseberries are planted about 2½ feet apart in rows. These can be used along a fence if there is no other room. Planted on the outside of a poultry fence they grow vigorously and are sightly.

Where there is space for a small group, the home grower may plant his peaches between his young apple trees and thus have their earlier fruit while the apple trees are growing. Use one-year-old peach and two-year-old apple trees. The peaches will begin bearing in three years and the apples in from seven to ten years.

Notes From Green's Fruit Farm

The Hillside Orchard

The apple orchard, or in fact any orchard, is an attractive feature of a farm. I like to see an apple orchard perched on a side hill or on the top of a hill where it is conspicuous and where it can be seen when in blossom and when the trees are loaded with beautifully colored fruit.

When I was a boy I planted such an orchard as this. Every year I go back to the old farm and take pleasure in looking over this orchard which is now in its prime, bearing heavy crops of fine fruit.

Another reason why I like a hillside or hilltop orchard aside from its being an attractive feature of the landscape is that such an elevated orchard is more liable to be fruitful and to bear more frequently than orchards on low lands. This is true of western New York and other rolling or hilly sections, but would not apply to some level stretches of country where profitable orchards of large and small size may be found.

Sweetheart Strawberry at Geneva, N. Y., Experiment Station

The following is the behavior of the Sweetheart on the grounds of this station:

Plants numerous, vigorous, very productive, slightly attacked by leaf-spot; leaves medium in size and color; flowers perfect. Fruit above medium in size at the first pickings, regular in shape averaging conic, with pointed apex; light to medium red, glossy, attractive, coloring somewhat unevenly; seeds sunken; flesh averages the same color as the surface of the berry, juicy, firm, sprightly, not as high flavor as the Marshall, ranking fair to good in quality.

This variety appears to be very productive. The berries at no time have been large in size. It, however, may have value as a canner rather than to be placed on the market in competition with larger berries. When compared with such varieties its greatest defect seems to be lack of size.—O. M. Taylor.

The Heavenly Blue Flower

Two years ago Prof. H. E. Van Deman and myself were taking an automobile ride through the fields of Green's Fruit Farm, when we came upon a view that interested and startled us and we ordered the machine to stop. In front of us in a large field was a little plantation in which were standing plants about three feet high filled with blue flowers, which as a mass seemed to make us feel as though we were looking at the blue sky. I have never known any flowering plant to make such an impression upon me and upon my companion as did these flowers, which I called the Heavenly Blue Flower. Its botanical name is *Anchusa*. It comes from the nursery as a root something like the peony root. It bears transplanting well and soon begins to send up strong shoots, blossoming the first season planted. This is a remarkable new flower that must become popular and create a sensation when more widely known.

Where Do Fruit Growers and Farmers Secure Advice and Suggestions in Regard to the Best Methods of Farm Work and Procedure?

The Agricultural Department at Washington, D. C., and the State Experiment Stations scattered all over this continent are doing great work in assisting rural people in managing their farms and their crops to the best advantage. These departments issue bulletins and spend large sums of money each year in attempting to distribute the bulletins, and yet not one farmer in a thousand the country over gets one of these bulletins. The good work promoted by the bulletins spoken of only reaches the fruit grower and farmer through the farm publications, the weekly and monthly periodicals published expressly for rural people.

The above fact is not generally realized by the people of this country. There are few lawmakers or men in responsible positions who realize the good work that the average farm magazine is doing over this wide country. For this reason I take pleasure in copying from the annual report of the Secretary of Agriculture this significant statement:

"As the result of long observation, as well as of careful survey, the department

reached the conclusion that, aside from the conveying of information by competent persons directly to farmers on their farms, the most efficient medium for reaching the farmers was the agricultural press.

"It should be evident from the statements above that the agricultural journal which reprints from the Federal publications or publishes digests of their material will obtain useful copy at practically no expense and at the same time offer features which will be absolutely new to a vast majority of its readers. In so doing, furthermore, such a publication will undoubtedly render practical and valuable public service."

The Productive Mulberry

I have planted several Russian mulberry trees at Rochester, N. Y., home, mainly as food for birds. These trees have all yielded fruit abundantly with the exception of one which has never borne a single specimen of fruit. Last July, the ground under one of my mulberry trees was almost black with ripe fruit that had fallen and the tree was loaded down with ripe and immature fruit, so that the branches were severely bent with their burden of berries. So far as I can see, it would seem that the birds prefer the black Tartarian cherry to the Russian mulberry, but possibly I may be mistaken as the mulberry is farther

the property in apples picked and sold the first year. There were doubtless numerous other similar sales of orchards in past years at prices which indicated that the people of western New York were not appreciative of the value of apple orchards, and yet they should have been, for this is the pioneer apple growing section of this entire country and one of the most favored sections for fruit growing in the world.

I hear of sales of bearing orchards on the western slope of this continent at \$2,500 per acre. It is likely that these high prices for western orchards have led to the present appreciation of the salable value of bearing orchards in western New York.

Does Orcharding Pay?

Lately the experiment stations in the leading fruit producing states have been giving considerable attention to the financial side of orcharding, conducting extensive investigations to ascertain the actual cost of production and net profits from the commercial apple orchards. The Virginia experiment station has found that the average cost of producing apples in that state is \$1.50 a barrel and concludes that the commercial fruit grower in Virginia can base his profits or losses on this estimate, with a fair degree of accuracy. The most accurate data, however, on the cost of apple production

not overlook. It concludes its report by saying that "the profits of this orchard are probably many times as great as those from the average plantation in New York. Indeed, if the financial history of every apple tree in New York could be written it would be found that the total cost of all quite equals the receipts from all—in other words, many are losing and few are winning."

The progressive orchardist who follows modern practical methods of culture, spraying and pruning, picking, packing and marketing will be the winner. The men who are not willing to follow these methods might as well realize first as last that there is nothing in fruit growing for them.

Pear Culture in California

Soil and Climate.—The best pear soil is deep and rather heavy, with plenty of moisture, says Ralph E. Smith, Professor of Plant Pathology.

The Bartlett is the principal and most exclusive variety grown in California. A few others like the Winter Nelis are sometimes quite profitable, but their culture is exceptional. French seedling has been the usual rootstock, but the Japanese pear is coming into use on account of some resistance to blight and wooly aphid. Pears are planted about twenty-four feet apart, or seventy-five trees per acre. The trees cost about twenty cents each in quantity. Six to eight years is required to commence commercial bearing. The trees are long-lived and very hardy. Other crops may be grown between while the trees are young. Orchards should be plowed in spring and cultivated frequently. Severe pruning is necessary. The tree when planted should be cut back to a height of twenty inches, and each year's growth thereafter should be shortened to a length of twelve to eighteen inches, thinning also to a framework of three to five frequently branched main limbs. Lateral branches should be headed in to produce fruit spurs. Fertilization is not much practiced and is often undesirable on account of making the trees more susceptible to blight. Spraying is necessary to control scab, codling worm and other pests. The usual practice is a late winter application of lime-sulphur just before the growth starts, one combined spray of Bordeaux mixture and lead arsenate after blooming, and one or two later sprayings with lead arsenate.

Where Varieties Succeed

Local conditions play a great part in the selection of varieties. No one variety will do well in all sections; some are pretty well adapted, as the Elberta peach and Ben Davis apple, but even these do better in some localities than in others. Because the Baldwin apple is of great importance in New York is no reason that it will do well in Georgia or any other southern state. Before picking out the varieties for planting, a close study of the immediate locality must be made. Visit all the orchards in the vicinity and discuss with the growers the varieties that they have found to do best, both from a growing standpoint and a market standpoint. If there are no trees of the kinds of fruit that you desire to plant, start out with a small experimental orchard and test out the varieties before making the large or commercial planting, says Southern Ruralist.

Another point that is now becoming of importance is the question of pollination. In recent years it has been demonstrated that some varieties will not set fruit if supplied by their own pollen, but in order to produce a crop of fruit they must get the pollen from trees of other varieties belonging to the same species. It has also been shown that in nearly all cases the inter-pollination of varieties produces better crops of better fruit. Knowing this it is considered a poor policy to plant any one variety in large blocks. It is better to plant eight or ten rows of one variety and then the same number of another, than to plant acres and acres of the same variety. This seems to be true with all species of fruit except the peach, which fruit seems to be entirely self-fertile.



Scene in a nursery.

from the house than the cherry tree.

I advise the planting of this hardy mulberry. It produces abundance of food for birds and can be made into preserves and sauces, though for cooking it is not so desirable as the blackberry and other similar fruits. It is an attractive tree, easy to transplant and will thrive almost anywhere. It is a very hardy tree and will endure severely cold climates.

Western New York Orchards Selling at Over \$1,000 per Acre

The sale of the Timothy Costello fifty acre orchard near Penn Yan, N. Y., for \$60,000 was a notable event. This section of the country has never fully appreciated the value of an acre of productive apple trees. As in many other things, it was necessary for western fruit growers to teach us the value of our orchards.

In the past years, when a farm of 100 or 200 acres was sold, on which was located an orchard of from 5 to 12 acres, the price of the farm through lack of appreciation was not greatly enhanced by the fact that there was upon it a thrifty, young, bearing orchard. I have known a number of such farms in this immediate locality sold at about \$150 per acre, which enabled the purchaser in many instances to sell enough fruit from his orchard the first year of his possession to pay for the entire farm. Such was the case with the Hibbard farm located about 13 miles west of Rochester, N. Y.

Another similar sale occurred near the village of Walworth, east of this city, where the estate of a notable nurseryman was closed and a large, bearing orchard sold for a price so low as to enable the owner to more than pay for the purchase price of

and returns therefrom is that secured by the Geneva experiment station in its ten-year record of the Aucher orchard, a few miles west of Rochester. These accounts of the Geneva station tell what each of the orchard operations has cost, the number of bushels of fruit produced, and the selling price; in fact they give an authenticated record of this New York apple orchard in its fourth decade. The period just preceding the prime of life.

After figuring the interest at five per cent. on an acre valuation of \$500, which is not too large for a mature apple orchard in good condition, taxes on land, labor cost of spraying, tillage and all incidentals of each acre, and dividing the result by the average yield, it was found that the cost of producing a barrel of apples in this orchard is \$1.29. These apples yielded a net yearly profit per acre during the ten years of \$95.60. Add to this the \$25 interest on the investment and we have \$120.60 net, or 24.12 per cent. on \$500 as the annual dividend for ten successive years. And the station asserts that the orchard, barring accidents, will do as well, or rather better, during the next twenty years than it has in the past ten. The investigators also say that as good or better dividends are coming from many New York apple orchards similarly situated and cared for.

These figures indicate that a bearing orchard in the prime of life just now is good property to own. They are also highly encouraging to the men who have invested in the many thousands of acres of young apple orchards in the Western New York fruit belt in the last ten or fifteen years. But there is another side to the question, which the station does

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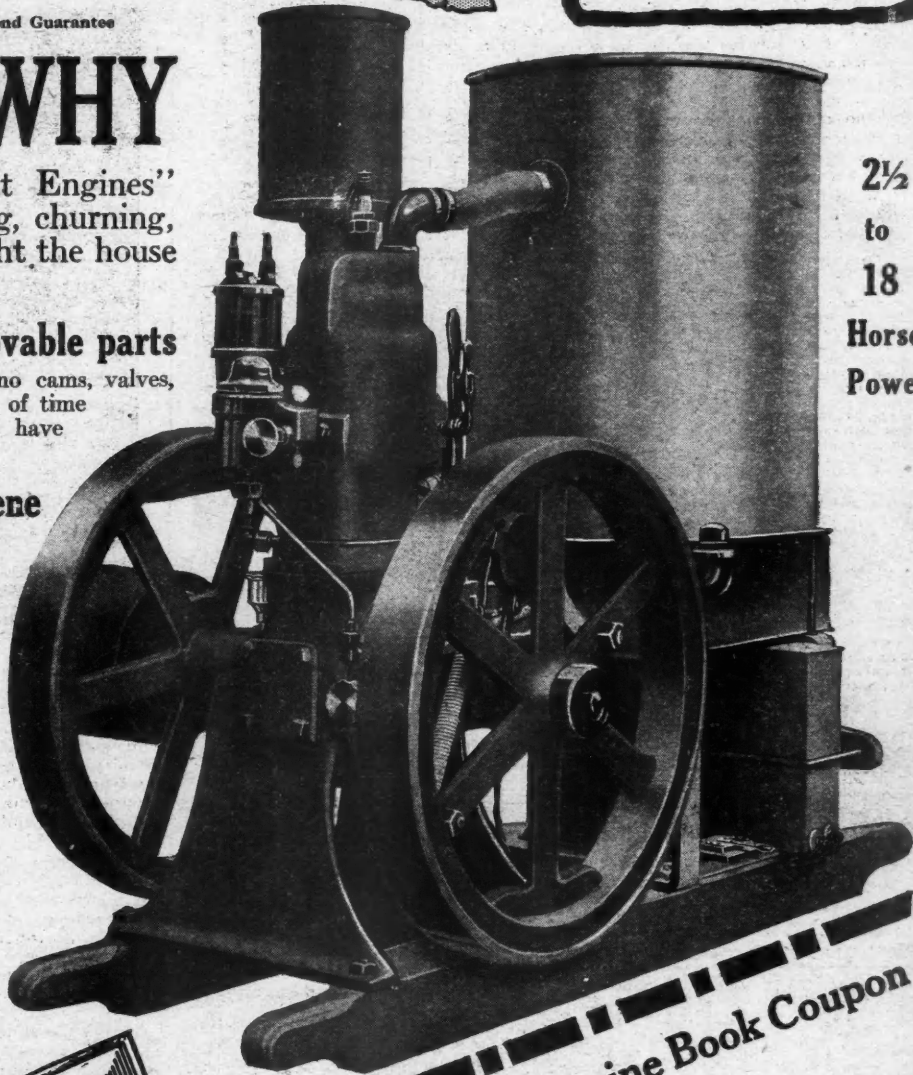
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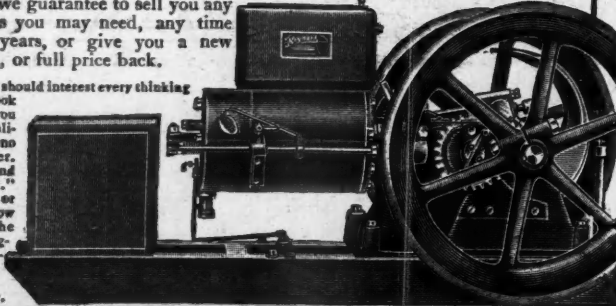


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Cupid's Disability

One never feels quite certain whether The lives that Cupid knits together Will stand the wear and tear of travel, Or whether they will soon unravel, His so-called knots turn out mere hitches, And, frequently he drops the stitches. Perhaps it is the part of kindness To place the blame upon his blindness. —George B. Morewood, in Judge.

Cementing Hollow Trees

The practice now becoming general of cementing hollow places in trees, is greatly to be commended, tending to prevent further decay, adding to the stability of the trunk, and being a great addition to the good appearance of the tree, says the Practical Farmer. The cracking of the cement evident in some trees that have been so cemented, is altogether due to inferior work on the part of those who had charge of it. Such crackings are not nearly so much in evidence as they were, since it is better understood how the work should be done.

In the first place, every bit of decayed wood must be scraped out from the hole to be filled, until the surface shows hard wood. Not until then must the cement be placed in the hole. The cement must be made so that when it hardens it will become of the hardest nature. In filling



it in care must be taken that every hollow space is filled up. It is at the mouth of the hole that care is demanded that the cement does not project too far. Those who extend it until it is level with the outside bark make a mistake; and these are the folks who often suffer later and complain of the cement cracking. The cement must not cover the line of the inner bark. This bark is wanted to grow year by year and ultimately cover the face of the cement, and this it is unable to do satisfactorily if the cement is in its way; instead of this it pushes against it instead of growing over it, and it is this pushing, often, that causes the cement to crack. When the hole is very large, requiring much material to fill it, there would appear to be no objection to the use of hard stones being mixed with the cement, just as in the case of floors, walls, etc., but there must be the greatest care that the work be so well done that not a particle of moisture can find its way to the filled-in hollow when completed. The cement used can be so well colored that it appears to be part of the bark of the tree, except on close inspection.

Nuts as Food

Nuts form a very concentrated form of food, in many cases more so than cheese, and when rationally used they are readily digested and form a part of a well-balanced ration. Nuts are plentiful in many localities and should not be allowed to go to waste. A pound of walnuts will produce almost three times as much energy as a pound of steak. Such being the case, would not the use of a considerable quantity of walnuts, butternuts, and hickory nuts be a valuable addition to the winter's supply of provisions? The gathering of nuts is fine sport for the children.

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Selecting and Buying Nursery Stock

AT this time of the year many of our readers are, no doubt, beginning to think seriously of ordering fruit trees for fall planting, says C. A. McCue in Practical Farmer. Nearly every farmer owns, or ought to own, a home orchard. The home orchard usually has a greater assortment of varieties than the commercial orchard. The commercial orchardist wants only a few varieties that are ripe for certain market periods, while the home orchard demands a succession of varieties throughout the season.

What varieties shall we buy? The question can be answered only in general terms, as it would be foolish for one to attempt, in a short article, to give a list of varieties that would suit the widely varying conditions of all of our readers. In fact, no man can correctly answer this question for another. One may give hints that may prove valuable, but after all the ultimate choice lies with the man who raises the trees. There are certain rules that may be laid down for the benefit of the would-be purchaser. For instance, there is the question of personal likes and dislikes for a variety. One should, if possible, choose a variety that holds a personal appeal. Often we have to sacrifice our personal favorites among fruit varieties, to the exigencies of the market.

Plant varieties according to the purpose for which you want to use the fruit. If you are growing for home use, make a different selection than you would if you were going into commercial orcharding. In selecting varieties for the home orchard one should always look for high quality. Quality is not so necessary for commercial plantings.

The general market may, and usually does, demand a different type than the local market. If a "personal" trade can be worked up, certain "fancy" varieties may be grown. Such varieties, owing to certain peculiarities, such as shyness of bearing, color, shipping qualities, susceptibility to disease, etc., might not prove profitable if the grower had to rely upon the general market for his sales.

The choice of varieties may depend largely upon geographical location. Do not plant a variety just because it has succeeded in Colorado, Oregon or Delaware. Don't take the advice of every tree agent who comes along; the chances are that he knows less about it than you do. An agent for a well known nursery firm once came into my office and offered me a bit of free advice about what varieties I should plant. After a few moments' quizzing, he finally admitted that he didn't know anything about it, and that he had been selling oats all his life up to a couple of months previously.

There are no varieties that succeed equally well everywhere. Let your choice of varieties be influenced by local conditions, such as the slopes on your farm, the soil, drainage problems, distance from market and market demands. Study your market conditions thoroughly, know what it will take and what it will not take. If your market demands an attractive

fruit in fancy packages, choose attractively colored varieties that are of such shape as lend themselves easily to packing. The American market, as a general thing, demands varieties that are well colored.

After the variety has been decided upon the question arises, "Where shall I buy my nursery stock?" Such a question is a difficult one to answer, and for obvious reasons we cannot recommend any certain nursery firm.

WHAT KIND OF STOCK TO BUY

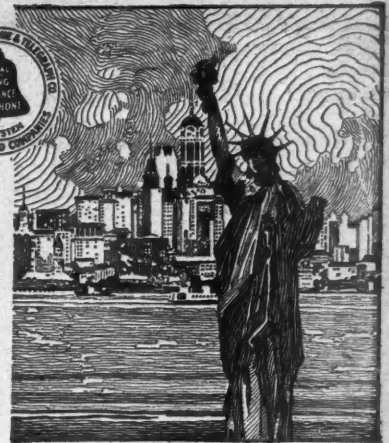
Buy the best. The purchase of inferior nursery stock is false economy. Often such stock may make a good orchard; but the risk is too great to take. Buy a first-class tree and nothing else. What are a few cents in the life of a tree? A first-class tree is not always straight; some varieties grow crooked naturally. You would not expect to get as nice a looking tree of Williams apple as you would of Ben Davis. The biggest tree is not always the best; in fact, an overgrown tree is as bad as a stunted one. Buy a medium sized tree that has had a good normal growth throughout the season. It is doubtful if there is anything in the "pedigree" business for fruit trees. Don't pay a big price for a tree with a pedigree. Any well grown tree of the variety will do just as well.

It makes but little difference if the stock has been budded or grafted. One is as good as the other. Budded trees are usually larger for their age. If grafted stock is purchased, don't be misled by the "whole root" versus "piece root" controversy. One will grow as well as the other. Always buy one-year-old peach stock. Many prefer one-year-old apple stock. It depends upon circumstances whether a one or two-year-old apple tree will do best. Personally the writer, as a rule, prefers the two-year-old stock. Pears should be two years old. Japanese plums one year old. Grapes one year old. European plums and cherries two years old. Leave dwarf stock alone. Order early. Don't wait until the stock has been culled over. Do it now.

When to Prune Grapes

Grapes may be pruned from the dropping of the leaves in the fall to the swelling of the buds in the spring. Pruning after sap begins to flow is devalizing. It is seldom advisable to prune when vines are frozen, as the brittle canes are easily broken during handling, says U. P. Hedrick, in Massachusetts State Board of Agriculture Report.

Summer pruning is far less practiced now than formerly, with a tendency to do less and less of it. It is used to remove surplus shoots and in heading back canes to keep them within limits. Very often shoots grow from weak buds on the fruiting canes to the detriment of the fruit-bearing shoots. These weaklings should be rubbed off. So, too, shoots often break from arms, spurs or even the trunk where they are not wanted. These should be removed. Secondary shoots sometimes appear on fruiting shoots, especially in the axils of the latter; these should be rubbed off. Here, for the most part, summer pruning should end.



Creating a New Art

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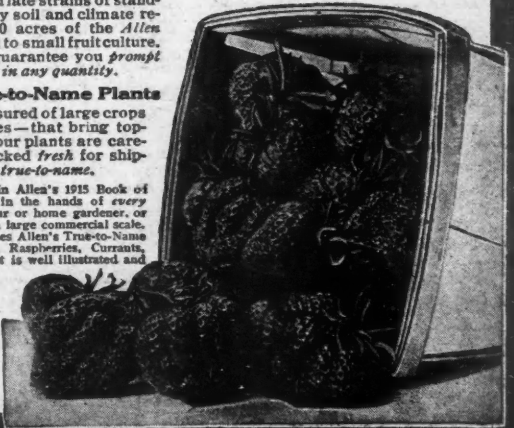
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Farm Department

Don'ts for Cold Weather

1. Don't use cold bits in cold weather. Your horse's tongue is tender, and his mouth is formed of delicate glands and tissues.
2. Don't clip your horse when the mercury is at the freezing point.
3. Don't fail to blanket your horse when he stands in the cold.
4. Don't forget that nasal catarrh, diphtheria, bronchitis and other ills often result from exposure and the chill which follows suddenly checked perspiration.
5. Don't put your horse's feet in unskilled hands. Good feet are spoiled by bad shoeing.
6. Don't keep your horse in an over-heated stable, then stand him for hours in a freezing atmosphere, and wonder why he became paralyzed.
7. Don't fail to water your horse the first thing in the morning, but not with ice water.
8. Don't load your horse too heavily when the streets and roads are blocked with snow.
9. Don't force him to back a heavy load over a snow bank. A shovel, with a little energy, will make it easier for your horse and your conscience.
10. Don't fail to oil your wagon axles. There is humanity in wagon grease.
11. Don't fail properly to shelter your stock from the cold and exercise them when the weather is good.
12. Don't fail to have your horse's teeth examined. Of what use is food if your horse can't eat it?
13. Don't dock your horse's tail. He needs it in winter as well as summer, and it was put there by a Master hand.
14. Don't overcheck your horse. Nature's curves are always graceful.
15. Don't forget that there is more profit in coaxing a horse than in kicking him. Try gentleness and see how it grows on you.
16. Don't wait until your horse is dead, or nearly so, before you send for a doctor or an ambulance.
17. Don't kill your horse trying to get him out of a hole before you send for a derrick.—Ex.

Cost of Farms

"The farm management surveys show that the cost of the typical farm, of say 140 acres, fully equipped, so that it can begin to pay, is between \$12,000 and \$15,000. This is a feature that is never mentioned by the 'back to the farm' agitators. The same laws of economics rule the possibility of profit or loss on the farm as in the shop. The big farm permits the economical use of labor-saving machinery. A smaller investment in buildings, machinery, tools and labor is made on the big farm, per acre, than is made on the small farm. This means that the small farm can not afford the improved machinery and methods which make for cheaper production and greater profit, and so will economically be the loser."

What Prof. Hedrick says is sound in the main, yet it is also misleading. It is perfectly true that a poor man, with little or no knowledge of farming, can not compete with experienced farmers, well equipped with tools and machinery, and it would be folly for him to try. It is also true that a small farm, such as men are often advised to buy, say of from twenty-five to fifty acres, on which only the ordinary farm crops of corn and wheat are raised, will not make a living for a family. It is not true that these and smaller tracts of ground can not be made profitable under certain conditions and by intelligent management; the contrary has been proved over and over again.

Very small tracts, made into market gardens or on which special crops, as small fruits, are raised, have been found to pay, but the neighborhood of a market is an element to consider, and they mean much labor, but it is hand labor that does not call for expensive tools. The one-acre and three-acre and ten-acre tracts, however, are not safely to be recommended as a rule means of livelihood, but as sup-

plementary to other sources of income. Such a piece of ground will provide all the vegetables and fruit and poultry that a family can use, with some to spare, and these products certainly would reduce the cost of living. Hence it is that suburban residence is desirable for the poor man, even if his main place of labor is a city shop or factory.—Indianapolis Star.

NOTES FROM CONNECTICUT FARMER

Mummied Fruit

Now that the fruit trees are bare of their leaves it is a good time to go over them and carefully remove all "mummied" specimens, so-called. A "mummy" is a dried up fruit—no need to describe it further. "Mummied" peaches, plums, cherries, grapes and pears, especially, should be picked off and burned, because they are full of the spores of brown rot and other fungous diseases. One of the most fruitful sources of the spread of brown-rot in the peach orchard is to have the "mummies" on the trees and on the ground. A little work at this season may save the crop next year.

APPLYING STABLE MANURE TO THE ORCHARD

We should not forget that winter is an ideal time to apply stable manure to the orchard, unless, perhaps, the site of the orchard is so steep that the liquid elements of the manure will be washed away. But there is not much danger of washing away the liquids when the soil is covered with a green crop, such, for instance, as crimson clover. There is very little waste to stable manure when it is carted to the fields and spread as fast as it is made. The rains, snows and frosts of winter and early spring break it up, dissolve it, and the active plant food elements are carried down into the soil and made ready for early use in the spring.

PRUNING PEACH TREES

Of all our orchard trees the peach stands in greatest need of careful and regular pruning. The pruning of the peach should be practiced every winter and it should be cut back more severely than any other fruit tree. A study of the habit or growth of the peach makes this statement more emphatic. The fruit buds of the apple or pear are mostly borne on old short spurs attached to the older limbs. The fruit spurs of the apple and pear lengthen but little each year and the fruit is found for the most part on the body of the tree instead of on the new growth at the extremities of the branches. On the contrary the fruit buds of the peach are borne chiefly on long whips of new growth which is most abundant at the extremity of the branches. In order to secure an abundant crop of peaches it is necessary to so treat the trees as to secure abundant new wood growth the year before the peach crop is expected.

TRASH IN THE ORCHARD

The term keeping the orchard soil clean applies to what may be thrown upon it as well as to what may grow upon it. When pruning and working over the trees don't leave the trash and rubbish to remain where it falls. Dead branches, old bark and even prunings of new wood may and usually do contain egg masses of insects, hibernating larvae, spores of fungi, etc. When the work of pruning is done, make a thorough cleaning up, and if you go to the trouble of sweeping up and burning the loose bark that has fallen to the ground, your time will not be profitlessly spent.

Fort Worth, Texas, Nov. 16, 1914.
Green's Fruit Grower Co.

We wish to compliment you on getting out a nice clean sheet, clear of disagreeable and unsatisfactory advertisements, and up to date on all subjects it undertakes to handle. Accept our thanks for prompt service, and our wish for your prosperous future.—J. N. Brooker, Texas.

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Bureau of Mushroom Industry, Dept. 1611242 N. Clark St., Chicago

March with the Fruit Trees and Shrubs

Written for Green's Fruit Grower by F. H. Sweet

With the exception of roses, every bit of the pruning ought to be finished by the end of the month.

Gather up all the prunings about the place and burn them. Plant diseases and pests are very liable to mature on them.

Apples, pears, or shrubs that are affected with scale should be treated early this month with lime-sulphur solution, unless they have already been sprayed; or even if one application already has been made, another will be so much the better. The lime-sulphur solution must not be applied after the buds swell nor when spray freezes on trees. It is not safe much later than the first week in March.

If there are any shrubs or herbaceous plants to transplant, the sooner they are moved the better, in order that they may get full advantage of the growing weather.

If fertilizer was not spread in the orchard last fall, put on, enriching as soon as the frost is out of the ground.

Spray the whole fruit tree place with Bordeaux mixture. Orchard, lawn trees, and fruit garden—everything but the evergreen trees and the hedges will be the better for it. About the middle of the month, put bands of tarred cotton about the tree trunks in order to stop the canker worms.

Treat the grapes with iron sulphate before the buds start in spring.

Beside their use for a cinder path, coal ashes may be employed as a mulch about young fruit trees.

Roses, oleanders, and other shrubs that have been protected for the winter, can have their covering removed by the end of the month.

Wood ashes are good for grapes, currants, pears, peaches, and other fruits. Put them on the last week in the month.

Buying Fruit Trees

We would advise those contemplating setting out fruit trees to visit all the orchards in the vicinity, counsel with the owners, and get all the information possible as to the best varieties for their section, what sorts are hardiest, earliest

and most abundant bearers, which are for summer, fall and winter, freedom from diseases, and their keeping qualities, says Indiana Farmer.

In our opinion the most desirable characteristic of summer and fall apples are size and cooking qualities, while for winter apples we would select those sorts known for flavor and keeping qualities. For the benefit of readers we will give a list of such varieties as have proven quite satisfactory in our experience in this (northern) part of Indiana. There are others that may be just as good, that are not in the list.

For early sorts we have the Yellow Transparent and Duchess of Oldenburg. The former is a prolific bearer. Formerly we had the Early Harvest and Red Astrachan, but these varieties seemingly have "run out" in this section, and no longer do well.

Our medium early and fall sorts are Maiden's Blush and Fall Pippin. The former is second to no other in its excellent cooking qualities, and is also a sure cropper. The Fall Pippin is also an excellent cooker, but has not in our experience been so prolific.

For winter varieties, we have the Baldwin, Rhode Island Greening, Fallwater, Rambo, Gravenstein, Golden Russet and Northern Spy. For cider we have the Smith and Snow varieties.—D. L., Elkhart County.

Happiness is a wayside flower that grows along the highway of usefulness.—Richter.

There may be no royal road to wealth, but there's a mighty broad highway to happiness!

Go over the vegetables and fruits in the cellar and pick out those that are decayed.

To do an evil action is base; to do a good action, without incurring danger, is common enough; but it is the part of a good man to do great and noble deeds, though he risks everything.—Plutarch.

Man creates, woman conserves; man composes, woman interprets; man generalizes, woman particularizes; man seeks beauty, woman embodies beauty; man thinks more than he feels, woman feels more than she thinks.

The Truth ABOUT Leather



How Many Hides Has A Cow?

IN a recent defensive circular to the auto trade, leather manufacturers define leather as "the skin or hide of an animal, or any part of such skin or hide, tanned or otherwise prepared for use."

But since whole hides are too thick for upholstery and the under fleshy portion must be split away from the grain side to make it thin enough, why should the two or three sheets into which the wastage is split be called leather? Although artificially coated and embossed to look like real grain leather, they are weak, spongy, and soft, crack, peel and rot.



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The W. F. Allen Co., 55 Market St., Salisbury, Md.

Small Fruits

Pruning and Training the Grape

To the average American mind there is a confusion between the terms "pruning" and "training," and especially so when applied to grape culture. Pruning and training represent two distinct operations, says The Practical Farmer. Training refers to the manner in which the different parts of the vine are disposed, while pruning refers to the removal of branches in such a way as to insure better fruit. Training is to a large extent dependent upon pruning. But such pruning



A vine of Tokay grapes as grown in California, where the clusters are much larger than those we can produce in the varieties suitable to our more northern localities.

ing is only to maintain the general conformation of the vine. We may prune to train; but we do not necessarily train to prune. As far as pruning is concerned there are really only two distinct methods, cane pruning and spur pruning, while there are any number of systems of training. In pruning the grape it should never be forgotten that the fruit is borne in a few clusters near the base of the growing shoots of the current season, and which have their origin from wood of last year's growth.

It is evident that new bearing wood must be renewed each year. There are two methods of such renewal, one is by what is known as spur renewal and the other is cane renewal. Cane renewal is really very simple, as it is only necessary to select a few sturdy canes and cut all others off. Usually from four to eight canes are left on the vine, the number depending largely upon the system of training used.

Briefly, the systems of grade training in vogue may be classified under three heads, upright, horizontal and drooping. There is no one best system for all varieties and all conditions. The strong growing varieties adapt themselves quite

readily to the drooping systems, while weak growers will probably do best under some other system. The upright systems carry two or more canes or arms along a low horizontal wire, or sometimes obliquely across a trellis from below upward, and the shoots are tied up, as they grow, to the wires above. The horizontal systems carry up a perpendicular cane or arm, or sometimes two or more, from which the shoots are carried out horizontally and are tied to perpendicular wires or posts. The drooping systems carry the canes or arms up on a high horizontal wire or trellis, and allow the shoots to hang without tying.

More about Currants. For real sweet currants, the white varieties are preferable, but while good for family use, they are not popular in our markets. Prof. Taylor says the Perfection is a good commercial red variety, but not as vigorous, either in growth or in fruiting, as Wilder. Mr. Hepworth, who claims to have 60,000 currant bushes in bearing, and who sets currants anywhere and everywhere that he can discover a place for them, among young trees, in the vineyard, etc., says that his Wilders grow all to wood and therefore he plants no more of them. He ships most of his currants to Chicago, where they sell at \$3.50 to \$4.50 per bushel. His best package is the quart basket, but he also ships in 4 and 6-pound grape baskets, and sometimes "in any old package," even half bushel baskets. The currant is a fruit that stands shipment well. One grower has a Victoria and an old Red Dutch on his grounds that were planted in 1874, and are still in bearing condition. A good crop of currants can be grown in part shade. The yield ranges from 6 tons down to 1½ tons per acre. To all this may be added that the currant is an especially valuable and profitable crop, grown on a smaller scale, or in home gardens, in localities where a good local retail demand can be found. In my own vicinity I have no trouble to sell all the currants I can raise, at from 10 to 12 cents per quart. It is not unusual for a good currant bush to bear 8 or 10 quarts of fruit, thus bringing \$1.00 or more gross returns.

This Year's Growth; Next Year's Fruit

That next season's growth of foliage and its fruit crop are compactly folded away in the foliage and fruit buds now dormant is no less a wonder because it is a recognized fact, says Indiana Farmer.

The preparation for an abundance of foliage and fruit next year is the work of vigorous trees. Unhealthy trees and those weakened by neglect or injury do not accomplish a complete preparation. They may make an attempt, but next year's foliage will be sparse and the fruit, if any, meager and inferior in quality. The new buds lie snug in the axils of the leaves and are at the extremities of the branches as a culmination of the season's growth there. As soon as the work of the leaf is established in summer, these little buds with their promise for the future begin to build up their tissues and increase in size. These buds will not take the place of leaves that are destroyed or injured. They are not yet capable of this. Their business is the work of next year.

Mr. Charles A. Green:

I am very glad indeed to send the enclosed dollar for Green's Fruit Grower for three years. I have a bungalow on the shore of Narragansett Bay, a half hour's ride from Providence. I have set out a number of fruit trees there, and also raspberries, grapes and strawberries. All have done splendidly. Your paper gives me valuable help in caring for my trees, berries and garden. This I make my hobby, outside of my profession, and find in it great benefit and delight.—D. B. Lothrop, R. I.

Get Low Prices on Berry Boxes and Baskets
Write for our Free Catalog! Shows you how you can save money by buying direct from the largest Berry Box and Basket Factory in the Country.
New Albany Box & Basket Co., Box 102 New Albany, Ind.

Over 10,000 Sold the Past Season
The only garden cultivator upon the market, that you can set any depth you wish, so that it sits the soil just that depth all down the row. Go between the rows or across the row. Runs 30 per cent easier than any other cultivator.
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Knight's FRUIT NONE BETTER PLANTS
For over thirty years KNIGHT'S PLANTS have been making big money for our customers. This season we are offering a price that will make you say "WOW!"
\$100.00 IN GOLD FREE
for the most productive strawberry patch. This contest is fully explained in our new catalog. Write for it today. It's FREE. While it lasts. Write to Knight's Fruit Plants, Box 100, New Albany, Ind.

PERDUE'S BEST QUALITY Strawberry Plants
give satisfaction. A customer says "your plants outdid them all." I. A. Pottenger, Ohio. I have 3,000,000 large, stocky, well rooted plants at bargain prices. Satisfaction and safe delivery guaranteed. Write today for wholesale and retail free catalogue.
C. S. PERDUE, Box 15, Showell, Maryland.

STRAWBERRY PLANTS
All the standard varieties; fresh dug high grade stock. Our catalog is free. Send for one.
The Flansburgh & Potter Company
Box 359
LESLIE, MICH.

Small Fruit Plants
that will grow, are true to name and are guaranteed to reach you in a good growing condition. Grown on rich soil which gives them a large vigorous root system. Satisfaction guaranteed. Write for price list.
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Keith Bros. Nursery, Sawyer, Mich.

STRAWBERRY PLANTS All the leading New and Standard Varieties at Reasonable Prices. Descriptive Catalogue Free.
BASIL FERRY, GEORGETOWN, DELAWARE
Headquarters for Full Bearing Strawberry Plants

350,000 GRAPEVINES
49 varieties. Also Small Fruits, Trees, etc. Best rooted stock. Genuine, cheap. 2 sample vines—free. Descriptive price list free. Lewis Roesech, Box D, Fredonia, N. Y.

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FITS YOUR OLD LAMP.
100 Candle Power Incandescent pure white light from (kerosene) oil oil. Beats either gas or electricity. COSTS ONLY 1 CENT FOR 6 HOURS. We want one person in each locality to whom we can refer new customers. Take advantage of our Special Offer to secure a Beacon Burner FREE. Write today. AGENTS WANTED.
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\$9,000 offered for certain inventions. Book "How to Obtain a Patent" and "What to Invent" sent free. Send rough sketch for free report as to patentability. Patents advertised for sale at our expense in Manufacturers' Journals.
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Bicycle & Xmas Lights, Railways, Telephone, Bells, Bells Batteries. Catalog 3c. Ohio Electric Works, Cleveland, O.

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Our representatives are earning \$20 to \$150 per week. Write quick for sample and territory. It's selling like wild-fire. Everybody's a customer.
Hytee's Factories, Majestic Bldg., Indianapolis, Indiana

Melon Growers
I have a booklet about good melon seed and how to grow good melons that I want to send you free. You owe it to yourself to get a copy. I sell direct to the planter and guarantee satisfaction.
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8 HOURS

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MANY APPLES LEFT
Storage Holdings Estimated at 8,000,-
000 Barrels
This is 3,000,000 Barrels in Excess of
Last Year's Figures—Many
Boxed Apples

Cold weather restricted trade in country produce in the public market this morning to negligible proportions, and prices in the absence of business were unchanged. Dealers had some interesting figures on the holdings of apples in the United States, it being estimated that there were 8,000,000 barrels on December 1st. This included boxed apples. The "Produce News" reported an increase of 3,000,000 barrels over last year. It gave the increase in Canada as 200,000 barrels.

Boxed apples showed the largest increase, it being estimated that there are 3,000,000 boxes more apples in cold and common storage than at the corresponding time last year. The bulk of this increase is in California, which is reported to have over 1,000,000 boxes compared with 600,000 December 1, 1913. Although there have been reports that the Colorado crop was pretty well cleaned up, it is learned from authentic sources that that state has nearly 600,000 boxes, while Washington has 1,500,000 boxes, nearly 1,000,000 boxes more than last year at the same time.

From estimates gathered by the "News" correspondents in New York state, the holdings of barrels and boxes, reduced to barrels, are in the neighborhood of 2,600,000 barrels. This is nearly 900,000 barrels more than last year. New England states (Maine, New Hampshire, Vermont and Massachusetts) have about the same quantity as last season, while Pennsylvania, Ohio, Michigan and Wisconsin are far ahead. The same is true of West Virginia and Virginia. It is figured that the former state has at present 260,000 barrels compared with 65,000 last year. Virginia has 275,000 barrels against 165,000 on December 1st, last year. Indiana is credited with 160,000 barrels, practically the same as last year. Illinois is far ahead of last year, her holdings being 750,000 barrels, compared to 575,000 December 1st, last year.

There is no way of obtaining any accurate estimate of the quantity of fruit held in farmers' barns and cellars. It is believed that this latter quantity is large and that it will cut a considerable figure in the deal.

Rabbits as Orchard Pests

During winters of deep snows, rabbits, especially jacks, become a serious pest to young orchards, by girdling the trees just above the snow line. They seldom attack plum or cherry trees, apple being the one usually damaged.

Various methods of protecting trees from the rodents have been used with more or less success. One of these is common 24-inch rabbit wire rolled into a cylinder and placed around the tree trunk.

The U. S. Department of Agriculture recommends the following wash, to be applied to the tree trunks with a brush: Unslacked lime..... 20 pounds
Flowers of sulphur..... 15 pounds
Water..... 50 gallons

This wash has been used to our knowledge successfully in Colorado.

When trees have been girdled, the gnawed surface must be covered at once, before the wind and sun have access to the wound. The injured parts may be painted or covered with grafting wax.

As a rule, trees treated in this manner, in the spring will grow new bark. In cases of severe girdling, the method of bridge grafting may be used, this operation being a simple one for a nurseryman familiar with the process of grafting.

The following method of poisoning was used by us successfully in an orchard near Fort Collins last winter, fifty jack rabbits being killed in one night.

Cut a slit in an apple and insert strychnine alkaloid, powdered, the right amount being what the tip of a knife blade will hold, close the slit and wipe the apple to remove the bitter drug on the outside. Scatter the poisoned bait through the orchard at the base of the trees.—W. L. Burnett, Colorado Agricultural College.

Note: I dare not use poison; children might eat it. At Green's Fruit Farm we use a thin veneer of wood.—C. A. Green.

Honesty of Women

Statistics compiled by American guarantee companies show that, as regards honesty, women are superior to men. Women in America are employed in busi-

ness as extensively as men, and yet the record shows that almost every embezzler and defaulter was a man. There are more women cashiers than men. The department stores and places of almost every

kind employ women to handle their receipts and give change, yet there are 100 cases of men cashiers stealing where there is one of a woman taking her employer's money, strange as it may seem.

THE AUTO-OILED WINDMILL WITH DUPLICATE GEARS RUNNING IN OIL

Every bearing is constantly flooded with oil. Two quarts of oil in the gear case of this 8-foot auto-oiled windmill will keep the gears and every bearing flooded with oil for a year or more.

The galvanized steel helmet covers the gears, keeps out rain, keeps out dust, keeps in oil. The mill needs oiling but once a year.

There is a windmill, known the world over as "the windmill which runs when all others stand still." This new windmill with gears and bearings flooded with oil runs in much less wind than that well known windmill.

The two large gears, which lift the load straight up, are each independent of the other and each is driven by its own pinion on the main shaft and must take its half of the load at all times.

The auto-oiled windmill, with its duplicate gears and two pitmen lifting the load straight up, is unbreakable. Every 8-foot mill is tested under a pumping load of 3000 pounds on the pump rod. For the larger sizes the load is proportionately greater. We know that every one of these windmills is unbreakable. We venture the assertion that this is the most nearly perfect, best made, best tested, best oiled, most nearly perpetual, automatic and self-sufficient of any machine of any kind ever made for farm work and the most nearly fool-proof.

There is no friction on any part of the furling device when the mill is running and very little when the wheel is furled.

A small child can easily furl this windmill or an automatic regulator can take care of it. One of these mills has been furled 10,000 times in one day by a man on our premises—more times than it would ordinarily be furled in 30 years of service.

A band brake, of the automobile type, is used, and it always holds.

The gear case contains two pairs of gears and the supply of oil. From this gear case the oil circulates to every bearing in a constant stream. It flows out through the friction washers in the hub of the wheel and is automatically returned to the gear case. Not a drop of oil can escape. It is used over and over. So long as there is any oil in the gear case the gears and every bearing will be flooded with oil.

If you are tired of climbing a windmill tower, if you are tired of buying repairs and having them put on; or, if you are tired of waiting for a big wind, let us furnish you an unbreakable, self-oiling, ever-going mill to go on any old tower. It costs but little and you will get the difference between no water in a light wind and an abundance of water in almost no wind. The flooding of all the working parts with oil, the perfect balance of the wheel and vane on the tower, the very small turntable on which the mill pivots and the outside furling device make this difference.

Now there is no objection to a high tower. Have as high a tower as you need to get wind. You don't have to climb it. Your dealer can come once a year and put in oil, if needed, and inspect the mill.

Running water purifies itself—stagnant water, standing water, collects and retains impurities. If you pump from your well constantly all the water it can spare, the water that comes in to take its place will be pure. If the water in your well stands until you happen to want some, and you pump but little, then it is likely that surface water will flow into it and carry in impurities. The unsafe well is the one that has standing water. A flowing stream is the thing to be desired.

The auto-oiled windmill makes all this possible as it can run from one year's oil to the other with practically no wear and no cost. If interested, write Aermotor Co., 1146 So. Campbell Ave., Chicago. Why not have flowing water, cool in summer and warm in winter, always fresh and pure? It will cost next to nothing. It will give health to your family and stock. Let the water run into a good size reservoir and raise all the fish of the choice kinds your family can eat, and have water to irrigate your garden and make it raise many times as much as it would otherwise. Water costs nothing. Use it.

We need and must have the best dealers everywhere. They need us if they are going to remain in the windmill business. Write right now.

To let it stand is to abuse it.

I'll Send You This Big Can of

CORONA

WOOL FAT

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It Will Heal and Cure

Hard and Contracted Feet, Split Hoofs, Corns, Scratches, Grease Heel, Thrush, Quarter Crack, Barb Wire Cuts, Sore Teats of Cows, Ulcers, Old Sore, etc. All I ask now is that you fill out and mail me the coupon.




Corona Wool Fat

The Wonderful Healing Compound

is unlike anything you ever tried or used. Don't confuse it with salves or ointments which contain grease and blister compounds. It is the only remedy that will penetrate the hoof of a horse, which is 60% to 70% water. It is not a grease, but the fatty secretions extracted from the skin and wool of the sheep. It is readily absorbed, penetrates to the inflamed inner tissues, heals and cures. Does not burn or blister, leaves no scars, causes no pain, will never get rancid or decompose.

Send No Money—Just the Coupon

I take all the risk—furnish you with a big can of Corona Wool Fat to try on any case you have. If it will do what I claim you won't hesitate to pay me a five dollar bill for it, yet all I ask if it satisfies is 50 cents. If it does not do what I claim, I won't cost you one cent. Write me today and I'll send this trial can by return mail—postpaid—just as offered.

G. C. PHILLIPS, Manager

15 Corona Block
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Give me a trial can of Corona Wool Fat. I will send you a big can of Corona Wool Fat if you return this coupon to me within 20 days. I will send you a big can of Corona Wool Fat if you return this coupon to me within 20 days. I will send you a big can of Corona Wool Fat if you return this coupon to me within 20 days.

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THE CORONA MFG. CO.

Gentlemen—"I used Corona Wool Fat on a horse that had a very bad quarter crack and by spring it was grown down and clear out and I never let him stand a day with it. I think it is the best preparation I ever used for all kinds of sores."

FRED STOUT Monroe, N. J.



Heals Barb Wire Wounds



Heals Cuts and Cracks

"Corn is Dear"

Read what a Great Farm Newspaper says about the 1915 outlook

The Breeder's Gazette of Jan. 21, 1915, says editorially: "If there ever was a time in our agricultural history when bumper yields should be assiduously sought, it is in this year of 1915. Wheat is high, and at the present rate of export our surplus will soon be exhausted. Corn is dear, and its comparative scarcity is one of the underlying causes of our present business depression. Oats are moving at strong values. . . The place of good commercial fertilizers as an efficient aid to increased production under certain conditions is too firmly established to admit of discussion."

Use Bradley's Fertilizers

Plant food and grain crops this year and by making every acre produce its utmost reduce the unit cost. This country must do her share toward furnishing food for the world in 1915 and it will pay the American farmer to do so. You can produce your crops most cheaply with Bradley's Fertilizers. They not only increase the yield, but they produce crops that ripen earlier and that are of better quality. Send for free booklet.

The American Agricultural Chemical Co.,

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Buffalo, Philadelphia, Baltimore, Etc.

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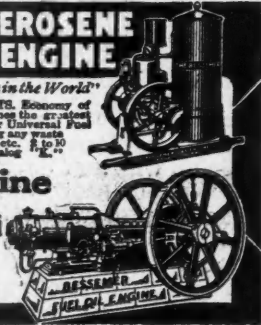
"The Masterpiece of the Largest Manufacturers of 2-Cycle Engines in the World"

It isn't the first cost of an engine—it's the running cost that counts. Economy of fuel and the sureness with which they run have made Bessemer Kerosene Engines the greatest little engines in the world. No carburetor troubles because the famous Bessemer Universal Fuel Feeder feeds automatically for a light or heavy load, thus preventing any waste of fuel. Non-cracking, only 3 moving parts, change of speed, etc. \$10 to \$100. 30 days free trial. Immediate shipment. Write for Catalog "E."

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Lower picture shows the famous Bessemer Fuel Oil Engine. Widely used in irrigation, flour mills, factories, electric light plants, etc. Runs on cheap fuel and cranks oil. No batteries or magnets required. Ignition is automatic after starting. 14 to 100 H. P. Special Catalog "F" free.

THE BESSEMER GAS ENGINE COMPANY
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Dairy and Creamery

Dairy Notes

To have your cows milk long, milk them clean.

Uneven salting and working make streaky butter.

To feed economically, cows should be fed as individuals, not as a herd.

Cream that is being ripened should be strained several times before it is ready for churning.

Not one cow barn in a hundred has enough windows. Sunshine is amply provided by nature, and it's a shame to shut it out of the stable.

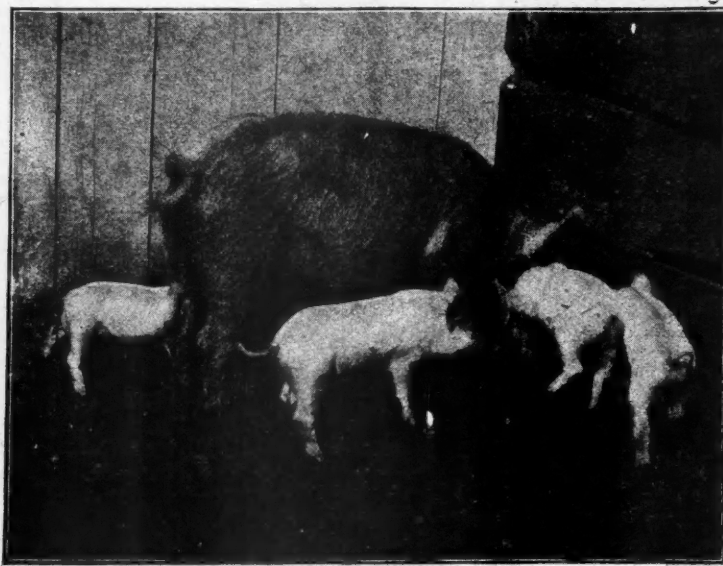
Cows will fall off in milk if water is not within easy reach. When in full flow of milk they require, it is claimed, fifty per cent. more water than when dry.

The greater the variety and the richer the feeds given cows, the more and better manure can be had from the herd. With dairy manure alone on the farm, the corn crop can be doubled within two or three years.

then govern our management accordingly. This cannot be accomplished by mere guesswork. It requires facts and accurate figures.

The Farm Apple Orchard.

No farm is complete without a good apple orchard. At least not in sections where apples can be grown at all. Yet there is a scarcity of good apples on many farms, and while millions of trees are being planted every year on American farms, yet there are poor prospects of the farm apple supply even holding its own, says Practical Farmer. This is not saying that apples will become scarce in the market, for the commercial orchards which are being increased at a rapid rate will supply the apple needs of the cities and towns. What is more, unless the average farmer gives his orchard more attention than he has in the past he will also be obliged to purchase his family fruit supply from the commercial grower.



A sure moneymaker on any farm.

One must truly love the humble cow. He must find in her material joy. He must study her with sympathy and tenderness. Cherish her as he would a loyal friend. He must think cow, talk cow, dream cow, and live cow, until his whole soul is filled with enthusiasm for her virtues and a concern for her failings. One must have no half-hearted regard for his herd. Such regard will never move man to seek the goal of high accomplishments. If one cannot temper his business of breeding with more or less sentiment, I fear his calling has been missed.—S. E. Jones, in Practical Dairyman.

Surprises

An investigation in farm management and cost accounts on a small New York farm showed a loss last year on poultry, corn, oats, millet, bush fruits and family garden, says Farmer's Review. The cows, hay, potatoes, peas, apples, pears, cherries, plums, asparagus and pasture each showed a profit. The largest item of gain was from apples brought about by careful orchard methods, honest packing and economical marketing. The asparagus gave the largest net labor returns—61 cents per hour for each hour's labor put upon it. The loss on corn and oats occurred notwithstanding good yields, the labor cost of 30 cents per hour being too high for profitable production. While the farm as a whole showed a fairly satisfactory net gain above interest on investment, the detailed facts were eye openers to the owner of this farm. Facts revealed in farm bookkeeping frequently upset the best prevailing opinions. It is not altogether safe to base farming operations on what we think we know. It is far better to be sure of what we know, and

The thousand and one details to be worked out and attended to in the daily routine of the farmer's life is reason enough for him to forget some things. He must be veterinarian, dairyman, chemist, machinist, botanist, bookkeeper, salesman all in one, and some more besides. No wonder he forgets about the orchard, which needs planting or attention, until some slick-tongued rascal of a tree agent comes around and talks him into purchasing a bunch of trees of questionable value at three times the price of good trees. Had he given the matter proper thought he would have sent to reliable nurseries whose advertisements appear in the reliable farm papers and, after making his selection, ordered direct from the nursery. The location is also important, and in choosing a place to plant a farm orchard it is well to select one that meets the requirements. Apples take years of care before any returns can be expected, and to plant the trees at an unfavorable place simply means a big loss. Swampy land should be especially avoided. Rocky or very stump land can be utilized in orchard, but the returns cannot be expected here as on land where the trees can be cultivated. Also there is little use planting trees in places where it is impossible to gain access to them with some sort of a spraying outfit. Probably the most desirable location is moderately rich soil on a gently sloping hillside.

Just Practicing

"Son, you mustn't carve your name on the piano. Another such episode and I'll punish you severely."

"Dad, how can you expect me to carve my name in the temple of fame when you won't let me get any practice?"—Seattle Post-Intelligencer.

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Thousands In Use giving splendid satisfaction justifies your investigating our wonderful offer to furnish a brand new, well made, easy running, easily cleaned, perfect skimming separator for only \$15.95. Skims one quart of milk a minute, warm or cold. Makes thick or thin cream. Different from this picture, which illustrates our low priced large capacity machines. The bowl is a sanitary marvel and embodies all our latest improvements.

Our Twenty-Year Guarantee Protects You Our wonderfully low prices and generous terms of trial will astonish you. Whether your dairy is large or small, or if you have an old separator of any make you wish to exchange, do not fail to get our great offer. Our richly illustrated catalog, sent free of charge on request, is the most complete, elaborate and expensive book on Cream Separators issued by any concern in the world. Western orders filled from Western points. Write today for our catalog and see for yourself what a big money saving proposition we will make you. Address,

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\$24 Buys the New Butterfly Jr. No. 2. Light running, easy cleaning, close skimming, durable. Guaranteed a lifetime. Skims 55 quarts per hour. Made also in four larger sizes up to 1-2 shovels. **30 Days' Free Trial** Returns its own cost and more by what it saves in cream. Fossil brings Flye catalog, folder and direct-from-factory offer. Buy from the manufacturer and save half.

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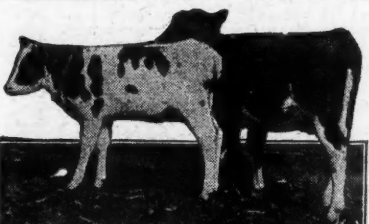
THIS silo is made of vitrified hollow clay tile that will last forever, and each tier of these tiles is reinforced by continuous bands of steel laid in mortar. No painting or repair bills. The

Natco Imperishable Silo

"The Silo That Lasts for Generations" is weatherproof, decayproof, verminproof and fireproof. The vitrified tile walls are impervious to either air or moisture and their dead air compartments prevent freezing. Don't take our word for these claims—write to our nearest branch for a list of Natco owners in your State—ask what they have to say. Also write for our catalog.

National Fire Proofing Company
Organized 1889 Pittsburgh, Pa.

Syracuse, N. Y. Bloomington, Ill.
Huntington, Ind. Lansing, Mich.
Madison, Wis.



Economy Calves

You can now feed a calf for the first five months of his life for less than half the cost of the milk he would consume in the old way. Do this with

Blatchford's Calf Meal

This meal has been known as the complete milk substitute since the year 1890. Very easily prepared. It prevents scouring, promotes a strong rapid growth and makes a better cow.

Write for Actual Figures based on that show you how to increase your calf profits. The new data will be sent for the asking. Write today. Blatchford Calf Meal Factory, Dept. 2473 Waukegan, Ill.

Paint Without Oil

Remarkable Discovery That Cuts
Down the Cost of Paint Seventy-
Five Per Cent.

A Free Trial Package is Mailed to Every-
one Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powderpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manfr., 16 North St. Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write to-day.

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EXTRACTS, SPICES,
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SHORES-MUELLER CO.
**A MONEY-MAKING
JOB FOR YOU!**
**WANTED NOW
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With rig or auto to call on regular trade with the big Shores Line of Family Medicines, Spices, Extracts, Toilet Articles, Veterinary Remedies, Oils, Etc. Our new, successful plan for increasing business assures you of over \$150.00 per month profits. Ask about it. No experience necessary. Don't worry about capital, but write quick. Shores-Mueller Co., Dept. 94 Cedar Rapids, Ia.

Good Advice to the City Man

The Department of Agriculture at Washington recently issued a circular which contains some excellent suggestions for the city man who has been led by glowing accounts in country life magazines to believe that the farm is a gold mine of wealth, only awaiting the touch of the intelligently directed hoe and plow to yield profits in abundance.

These stories of get-rich-quick farming usually make it appear that the reason all farmers are not rich is because of extravagance, ignorance and a lack of business ability, when, as a matter of fact, according to the views of the department's specialist, "farmers as a class are intelligent, industrious and economical, and many of them are men of good business judgment. Those who have made a thorough study of the business side of farming," he continues, "know that it is not an easy matter to make money on the farm. Only the most practical and experienced farmers are making any considerable profit out of their business. While it is true that occasionally a city-bred family makes good on the farm, this is the exception and not the rule. Many city people who have saved up a few hundred dollars and who have had little or no farm experience, but who are imbued with a rosy vision of the joys and profits in farming, buy poor land at high prices and thereby lose the savings they have been years in accumulating."

This is not only a true statement of conditions, but a timely warning which should be given thoughtful consideration by the man in the city who is longing for the green fields and the fruitful orchards of the open country. Farming is a proposition for the trained practical farmer; it is a risky venture for the amateur. Before investing the savings of a lifetime in a farm, the city-bred man will do well to heed the advice of the department's specialist, which is to go out into the country and work as a farm hand for two or three years thereby affording him an opportunity to obtain practical farm training and to learn at first hand the actual facts concerning farming.

Where the Milk Is Kept

A small boy from the city went out to the country to visit his grandad, says the Hiawatha, Ken., "Democrat." It was the first time he ever witnessed the milking of a cow. He followed the farmer to the barnyard and as the milk fell into the pail the child asked:

"Is that the milk we drink?"

The farmer said it was, and then the youngster remarked:

"At home we keep the milk in a refrigerator. Do you keep yours in that thing?" pointing to the cow.

Horse-Feeding Sense

It is sometimes said that "good horse sense" is better than theoretical sense, and as a rule it is true, too. If one who has good horses is without horse-feeding sense he is likely to have fewer horses in time, for they require attention in feeding as well as everything else. Prof. Barnes of the Colorado Agricultural College says that a horse should not be fed a large quantity of hay and grain without exercise. Many think that because a horse is thin in flesh no work should be required of him. It is always best to work the flesh into the animal rather than to fatten him as you would a steer.

A good plan is to have a stated program as to time and amount of feed to be given. Horses, by all means, should be fed regularly. Hay requires time for mastication and digestion. For this reason the large percentage of the hay should be fed at night. Horses soon learn the manner of giving food and water, so it is better to have one feeder and have his plan followed out for all the horses. The horse should receive some water the first thing in the morning. After watering, the horse is fed a small amount of hay, and then given grain after all the hay has been eaten.

A Wonder

College President: "You can't get into our college. You aren't qualified in the entrance requirements in Sanskrit, Greek or calculus."

Prospective Student: "No, but I am very well grounded in reading, writing and arithmetic."

College President: "Great Scott, man, you don't need a college education! Why don't you go into business?"—Puck.



The Supremacy of the DE LAVAL Cream Separator 37 Years of Leadership

Supreme in Skimming Efficiency

Over 35 years of experience and thousands of tests and contests the world over have demonstrated the De Laval to be the only thoroughly clean skimming cream separator, under all the varying actual use conditions, favorable as well as unfavorable.

Supreme in Construction

This applies to every part of the machine—to the bowl, the driving mechanism, the frame and the tinware. The De Laval patent protected Split-Wing Tubular Shaft Feeding Device makes possible greater capacity, cleaner skimming and a heavier cream than can be secured with any other machine.

Supreme in Durability

The De Laval is substantially built. The driving mechanism is perfectly oiled and the bowl runs at slow speed, all of which are conducive to durability and the long life of the machine. While the life of other cream separators averages from three to five years, a De Laval will last from fifteen to twenty years.

Supreme in Improvements

This has been the greatest factor in De Laval success. Not a year goes by but what some improvement is made in De Laval machines. Some of the best engineers in America and Europe are constantly experimenting and testing new devices and methods, and those which stand the test are adopted.

Supreme in Service

With its worldwide organization and with agents and representatives in almost every locality where cows are milked, no stone is left unturned by the De Laval Company to insure that every De Laval user shall get the very best and the greatest possible service from his machine.

Supreme in Satisfaction

De Laval users are satisfied users, not only when the machine is new, but during the many years of its use.

Supreme in Sales

Because they are supreme in efficiency, construction, durability, improvements, service and satisfaction, more De Laval Cream Separators are sold every year than all other makes combined.

Order your De Laval now and let it begin saving cream for you right away. Remember, that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below.

THE DE LAVAL SEPARATOR CO.

165 Broadway, New York 29 E. Madison St., Chicago

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

LET LIQUID MANURE BUY YOUR

LIME

Between now and seeding time, 10 tons of Caledonia Marl (Lime Carbonate) could absorb, from your stable floor, \$40.00 worth of ammonia and potash—in addition to acting as deodoriser and germicide.

This Marl (Nature's Lime) could then be put on your soil to increase each acre's productivity \$15 a year, as it did for Mr. L. J. Rounds, for instance. Write us to-day for explanatory booklet, etc.

INTERNATIONAL AGRICULTURAL CORP.
605 MARINE BANK BUILDING, BUFFALO, N. Y. (CALEDONIA MARL BRANCH)



Let me send you a WITTE Engine, to earn its own cost while you pay for it.

GET your engine from an Engine Specialist, on any suitable reasonable terms, at a fair price. **LOOK AT THESE NEW PRICES!**

2 H-P. \$34.95; 4 H-P. \$69.75; 6 H-P. \$97.75; 8 H-P. \$129.60; 12 H-P. \$219.90; 16 H-P. \$298.90; 22 H-P. \$399.65. Portable Engines Proportionally low. Why pay two prices for any good engine, or take chances on a poor or an unknown engine, when the "WITTE" costs so little and saves you all the risk? You can pay more than my price, but you can't get better engine-value from anyone. That's what my thousands of customers say and they ought to know.

WITTE ENGINES, Kerosene, Distillate, Gasoline and Gas

LIBERAL 5-YEAR WARRANTY.

DIRECT FROM FACTORY TO USERS EVERYWHERE.

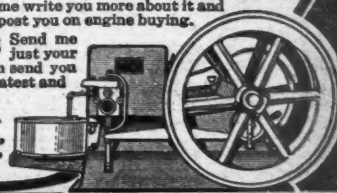
Styles—Stationary, Skidded, Mounted and Special Savary. Thousands in use in all parts of the world. Standard for 27 years—almost ever since there have been any gasoline or oil engines. In all those years the "WITTE" has proved its high-quality value at all

kinds of work, in all parts of the world. It is today better than ever, while the price is lower. My manufacturing advantages make this possible. I am simply sharing my advantages with engine buyers. Let me write you more about it and post you on engine buying.

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Send me just your name and address so I can send you my New Book with my latest and Best Offer by return mail. Ed. H. Witte, Witte Iron Works Co. 2373 Oakland Avenue, KANSAS CITY, MO.

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THEY fit so perfectly, are so soft and pliable that your hands are at home for any work you have to do. They save you money, because they save your hands, as well as your pocket.

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Healthy Trees Perfect Apples

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"SCALECIDE"

—the spray that's endorsed the country over as "The one great dormant spray." Mixed 1 to 15, it kills every scale it reaches or you get your money back. Guarantee with every package. It's easily prepared, non-corrosive and non-clogging. 1 lb. equals 3 lbs. lime sulphur. Destroys eggs, larvae and fungi in dormant state. Simple, safe, economical. Send for free booklet, "Scalecide, the Tree Saver." Write today, to Dept. B.

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50 Church St., New York City



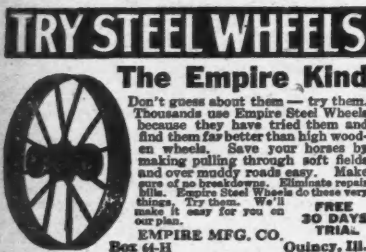
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FREE 30 DAYS TRIAL

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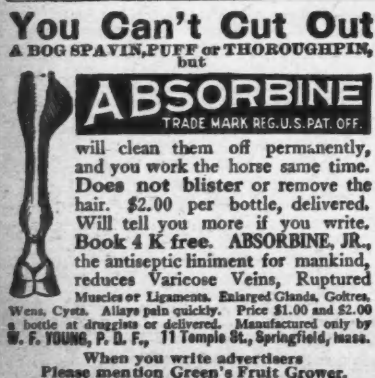
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will clean them off permanently, and you work the horse same time. Does not blister or remove the hair. \$2.00 per bottle, delivered. Will tell you more if you write. Book 4 K free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Varicose Veins, Ruptured Muscles or Ligaments, Enlarged Glands, Gout, Wens, Cysts, Allays pain quickly. Price \$1.00 and \$2.00 a bottle at druggists or delivered. Manufactured only by W. F. YOUNG, P. O. F., 11 Temple St., Springfield, Mass.

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Please mention Green's Fruit Grower.



Fruit and Two Farms

NO matter how successful a farmer may be in raising crops for the market, if he fails to grow every kind of fruit that will do well in his locality, he loses the sweetest part of farm life, says Southern Ruralist. The farmer's chance to get the best that life can afford is better than in any other line of business, but to do that he must first make everything for his table that this land will produce, and fruit is one of the most important things to have. In all this Southland of ours there is hardly a spot that will not grow several kinds of choice fruits.

The farmer makes a mistake who raises the question as to whether it will be profitable to raise fruit or not. The first thing to be considered is to have the home supplied with the best of everything, and then sell the surplus. Load the table as bountifully as you please for supper and breakfast, and leave off fruit, and you are short of a perfect meal. The system requires fruit, health demands it, and when the trees and vines are full of fruit in season and the storeroom is full of fruit out of season, life is worth living, and were more attention given to increasing home supplies in the way of fruits and vegetables, farm life would be more attractive, our children would be more satisfied and not leave us for the city, where so many sweet lives have been wrecked. Like all other things raised on the farm, it takes care and attention to grow fine fruit. This should be planted right and well cultivated; always bear in mind that when left to grow up in grass and weeds there will be no fruit; in nine cases out of ten the failure is due to the man and not to the land. To illustrate the difference in home life on the farm, I will mention two cases that I have in mind.

Some time ago I took supper with a one-horse farmer living in a little five-room cottage. Nothing was known of my coming and of course no preparation was made for an extra person at the table, but the many home-made things on that table have kept me thinking all the year. As I went through the front hall I saw several kinds of fresh fruit on a table ready to be eaten, and upon the table there were jams, jellies, preserves and some canned fruit, home-made bread, home-made butter, home-made ham, cream and curd just for the family. In conversation with the wife she explained to me her plan of preparing fruit when fruit was out of season. She said:

"We have cultivated dewberries, blackberries, grapes, pears, strawberries, plums, peaches and rhubarb."

She made it a point to put up 365 pint jars of fruit, one for every night in the year, and in addition to this lot she put up 52 quart jars as an extra supply for company that may come in. The work of putting up fruit enough for the year in this way took less than two days of her time. What a treat and what a saving to the family!

MARKETING FRUIT

The marketing proposition is also a big one. Some apple growers here depend on selling their apples to the traveling apple peddlers. Some ship in carload lots, going with the fruit, and I consider this a good way. I consigned quite a lot to commission merchants this year. But you can rest assured that the commission merchant will always get the big end. I keep a couple of men employed by the day to peddle for me. They haul the fruit as high as twenty miles and peddle to the small towns and country people. There are always belts where fruit can not be grown where the farmers will buy. It is no trouble to sell blackberries and Japanese persimmons. In fact, I have never yet been able to supply the demand for blackberries. The only trouble I have is to get the berries picked.

Great things are always made up of many small things. Even the great clouds are made up of many drops of rain. When you go to market if you have a load of many things it makes the whole load easier to sell, and all taken together will bring enough to make fruit growing pay better than any other line of farming.

THE FARM ORCHARD FOR HOME SUPPLY

My orchard contains about two acres. Before putting out the trees I had the ground well broken. Next we laid off the rows fourteen feet apart and set the trees fourteen feet apart in the rows.

My home supply orchard contains fourteen peach trees of different varieties. Ten apple trees (we have both kinds of fruit ripening from June until October); one wild goose plum; one California Green Gage plum; one Golden Seal plum; one red cherry; one black cherry; four pear trees; two damson and one quince tree, says Southern Ruralist. Across one end of the orchard we have a grape arbor consisting of ten Concord and ten Niagara vines. Around one side and end of the orchard are red and black raspberry vines, which have been trained to run on the wire fence enclosing the orchard.

We keep the grape vines fertilized with bones and the fruit trees with bones, wood ashes, leaves, peavines and straw.

We have always gone on the plan that an ounce of prevention was worth a pound of cure, consequently we have never been troubled with any kind of disease or insects.

While our orchard is not a large one, I am sure that no better fruit is grown in Alabama than it produces. It was planted not for commercial purposes, but to afford fruit for our own use. From April until November scarcely a meal is served without luscious fruit of some kind on the table, and quantities of it are put up for winter use. Peaches, apples, pears, plums, cherries, grapes and raspberries are canned. Various kinds of preserves, jellies and marmalades are made. Peach, apple and pear sweet pickle; spiced grapes and cherries are put up.

Fruits can be served and used in so many appetizing dishes and desserts can be made from them that one never becomes tired of them. Then, too, a more healthful food can not be found.

Our orchard produces a great deal more fruit than we need for our own consumption, consequently we have the pleasure of giving our neighbors a great deal. We could, of course, find a ready market and obtain good prices for the surplus, but as none of our neighbors has an orchard we have made a practice of dividing with them. Another advantage to be derived from the home orchard is that the waste is good food for hogs, and chickens enjoy the berries and cherries, too. During the fruit season our hogs are given very little corn.

The apple waste—peeling and cores—may be used for making vinegar. Oh, there is no end to the things which can be made from fruit.

American Apples

The keeping and shipping quality of the apple has thus been protected and enhanced in the interests of the American product. Wherever the American apple has been brought into competition with that of other countries it has taken preference and sold at a much higher price.

The disposition in this country is to increase the acreage in orchards. Wherever improved orchard management has been adopted, cultivation, pruning, spraying and the sorting and grading for uniform quality and attractive shipping package, there has been no product from other countries that is able to take rank with the American apple.

There was a time that the apple-growing industry of this country seemed to be centered in the Pacific states, but the last few years have awakened a new life in apple-growing all over the central west and old eastern states, where the apple orcharding industry had practically died out, owing to lack of business methods in selling the product and the neglect in protecting the trees from insect and fungous disease that threatened their destruction. The revival in tree growth by system in cultivation and management of the orchard has had results little less than miraculous.

The physical development of the orchard has been closely followed by business organization for the handling of the product that has popularized this fruit wherever it has entered into trade. The latest feature completed is a co-operative selling organization to dispose of the by-products, which include canned and evaporated fruit and other forms of apple utilization. There are more than fifty different by-products of the apple manufactured and offered for sale.

Apple orcharding in this country is only getting started; it is only in its infancy in the matter of development and extent of acreage devoted to the industry.



Spray

Make your garden and orchard yield more. Have perfect high quality fruit. You can if you use Hardie Sprayers. They have the high pressure so necessary for successful work. High Pressure

Hardie Sprayers

are used by thousands of the leading commercial growers. The largest orchard company in America and big state agricultural colleges and experiment stations are equipped with Hardie Sprayers. They are the choice of men who must have the best. Hardie's are perfectly designed, trouble proof, and work so easily that the operator will do a thorough job. Both hand and power sprayers are made in all styles and sizes.

Send postal for free catalog and free spraying book with full directions and formula.

THE HARDIE MFG. CO.
Hudson, Mich.

Good CIDER

Will make you big profits. Mount Gilead Cider and Grape Juice Presses produce 10 to 400 barrels daily. All sizes, hand or power. All power presses have steel beams and sills.

Fully Guaranteed
We make cider evaporators, apple-butter cookers, vinegar generators, cider and vinegar filters. Write for catalog.

HYDRAULIC PRESS MFG. CO.
184 Lincoln Ave. Mount Gilead, Ohio.
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Sew Anything

Leather, canvas, shoes, harness, saddles, heavy tops, etc. Any material, any thickness. Mount Gilead Sewing Machine Co. makes look-alike, neat, quick, easy. See the small? It keeps in the right. Answer Warren, Big money. G. A. MYERS CO., 624 University Ave., Chicago, Ill.

Hayes SPRAYERS

100 Gal. Tank
1 1/2 H. P.
300 lbs. Pressure.
With or Without Truck



The more thorough the spraying operation the greater is the profit from the crop. Hayes Power Sprayers are guaranteed to maintain 300 lbs. pressure. 300 lbs. completely atomizes the solution into a penetrating fog-like mist that soaks out and adheres to every particle of foliage.

25 STYLES—
Hand or Power
Sprayers for Small or Large Orchards.

Saves time and solution, and gives a better quality and larger quantity of salable fruit. We make sprayers for orchards, field crops, shade trees, hops, poultry, painting, home and garden use.

Write! Send postal for FREE Book 37 on High Pressure Spraying and our complete catalog.



HAYES PUMP & PLANTER CO., GALVA, ILLINOIS

Don't Stop Spraying

It is easier to keep up than catch up. It takes two years for trees to bear after the foliage is destroyed. Remember, that the dormant spraying is important, and in some states spraying is compulsory. Sprayed fruit is good fruit, and good fruit always brings a good price in any season.

IRON AGE

Bucket, Barrel Power and Fraction Sprayers include 70 complete plans for orchards, field crops, garden, poultry houses and beekeeping. Our "Spray" booklet shows how you can buy barrel or bucket sprayer now and build to larger uses when you need it. Ask your dealer to show this line and write us for "Spray" booklet and company calendar, both free.

Salem Mfg. Co.
Box 164
Greulich, N. J.

Use in any wagon.

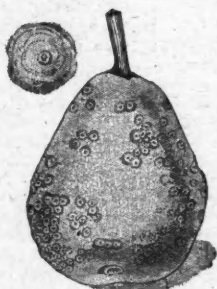
1,820,280 Barrels Apples Stored; Large Increase.
Fifty-Seven Per Cent. More Than Last Year—Half Bushel to Everybody in State.

THERE is in the Western New York fruit belt in chemical and common storage a total of 1,820,280 barrels of apples, according to figures compiled with great care from reliable sources. There was at this time last year a total of 1,158,420 barrels in storage. It is easy reckoning then that the present holdings exceed those of a year ago by 661,860 barrels or an increase of about 57 per cent.

Were all this immense holding from the orchards of the Lake counties and adjacent territory loaded onto cars they would fill 11,377 refrigerators of the largest size and were these cars made up into a single train it would reach from Rochester to Niagara Falls, by way of Buffalo, or more than ninety miles.

This quantity, big enough to give every man, woman and child in the entire Empire State more than a half bushel apples each, makes stories of apple raising in the West read like child's play. Wayne county alone has produced more apples in a season than all the territory west of the Missouri river, including California, Colorado, and Utah apple districts, Wenatchee, Hood river, Rogue river, Yakima and all the other sections in the far Northwest combined.

Appended is a list of the holdings at some of the principal points: Elmgrave, 25,000 barrels; Adams Basin, 8,000 barrels; Spencerport, 12,000 barrels; Holley, 62,000 barrels; Brockport, 90,000; Fancher, 6,000 barrels; Albion, 197,000; Medina, 160,000 barrels; Middleport, 95,000 barrels; Gasport, 82,500 barrels; Lockport, 165,000 barrels; Brighton, 60,000 barrels; Canandaigua, 10,560 barrels; Le Roy, 110,000 barrels; Oswego, 12,800 barrels; Hannibal, 320 barrels; Crockett, 320 barrels; Sterling, 160 barrels; Red Creek, 8,820 barrels; Wolcott, 28,000; Alton, 4,000; Wallington, 640 barrels; North Rose, 49,920; East Williamson, 20,800; Sodas, 56,000 barrels; Williamson, 49,600; Fruitland, 6,400; Ontario, 10,400 barrels; Webster, 2,720 barrels; State street, Rochester, 34,400 barrels; Hilton, 64,000 barrels; Hamlin, 2,400 barrels; Kendall, 51,200 barrels; Morton, 5,600 barrels; Carlton, 48,000 barrels; Brice, 12,800 barrels; Waterport, 28,800 barrels; Ashwood, 13,609 barrels; Lyndonville, 64,000 barrels; Millers, 7,200 barrels; Barker, 37,600 barrels; Appleton, 6,400 barrels; Burt, 60,320 barrels; Wilson, 37,900 barrels.



San Jose Scale on pear.

Cost of Spraying.

The following statements give a summary of the results obtained from the first four years' work:

- Number of orchards sprayed, 16.
- Total number of trees sprayed, 3,300.
- Average age of trees, 18 years.
- Average number of sprayings per year, 4.
- Average quantity of spray per tree each year, 13 gallons.
- Average quantity of spray per acre (50 trees), 650 gallons.
- Average cost of spray material per 100 gallons, \$0.87.
- Average cost of applying spray per 100 gallons, \$0.98.
- Average total cost of spraying per 100 gallons, \$1.85.
- Average annual cost of spray material per tree, 11.3 cents.
- Average annual cost of applying spray per tree, 12.7 cents.
- Average total annual cost of spraying per tree, 24.0 cents.
- Average total annual cost of spraying per acre (50 trees), \$12.00.

RESULTS OF SPRAYING

Average annual yield and value per acre (estimated on basis of 50 trees)—

SPRAYED TREES		
Marketable fruit.....	220 bu.	\$114.40
Culls and windfalls.....	55 bu.	3.30
	275 bu.	\$117.70
UNSPRAYED TREES		
Marketable fruit.....	90 bu.	\$36.90
Culls and windfalls.....	85 bu.	4.25
	175 bu.	\$41.15

SUMMARY

Difference between sprayed and unsprayed trees.....	\$76.55
Average cost of spraying.....	12.00

Average net gain per acre (50 trees) from spraying.....\$64.55
 How to mix Bordeaux in small and large quantities is discussed at some length. The importance of having a proper mixing device, in order to lessen the labor cost, is emphasized. A spraying calendar showing the proper time to make each application is given.

This bulletin shows that lime-sulphur may be used as a summer spray for apples with as little danger to the foliage and fruit as Bordeaux. It shows that the russeting caused by Bordeaux can be prevented by substituting one of the lime-sulphur preparations at the second spraying.

This bulletin may be had free by residents of Nebraska on application to the Director of the Experiment Station, Lincoln, Nebraska.—E. A. Burnett, Director, Nebraska Experiment Station.



Cut Worm.

Sayings

Written for Green's Fruit Grower by Jacob Faith

I talked with a man who said that he cannot afford to spend one dollar for a farm paper a year. I heard that man got a shipment consisting of a two-gallon jug of mail order whiskey, made of alcohol, cayenne pepper and cheap tobacco extract.

I have seen men that said they were too busy to cut firewood for their wives, take time to talk politics and spit tobacco juice on the sidewalks. One night I stepped on a batch, slipped and came near falling down, and were I in the habit of using profane words, I would have said one.

I have seen men hunt a job while their wives ran around at home with a ragged shawl wrapped around their heads, trying to find wood to cook something to eat.

GOOD ROADS

People in New York Enthusiastic Over Their Highways

The State of New York is spending one hundred millions of dollars in building good roads. That seems like an enormous sum of money, but there was a demand for good roads, and the results so far secured are worth all the effort. Over fifty million dollars have already been spent and about as much more is now available, and in a few years almost every portion of the state will be reached by high-class finished roads. They are like boulevards, well constructed, well cared for and ought to be very permanent.

It will not be many years until New York State will compare very creditably with any foreign country in the matter of good roads. When one is contemplating a change of location, it is worth while to consider the good roads, because a hard paved road means getting to market or to town at any time desired. There is not any question about bad roads interfering with placing the crops on the market at the proper time. A paved road leading to or past your farm ought to increase its value by from ten to twenty-five dollars per acre.

Look out for the fruit agents who are selling peach trees that they represent will endure 27 degrees below zero. If this were true every nurseryman would have them before the fruit agents.

"Sprayed Nine Years Without a Mishap"

so writes E. C. Bowers, State Horticultural Inspector, Harrisburg, Pa., regarding his Goulds Sprayer used for heavy demonstration work. The thousands of Goulds Sprayers in use are giving the best of results—and there's one for every purpose. The Goulds "Monarch" outfit shown below is specially adapted for high pressure work not needing a power outfit. Operates 4 leads of hose—8 nozzles; outside packed plungers—no leather; only one of the 25 styles of

GOULDS RELIABLE SPRAYERS

—hand, barrel and power, \$3 to \$800. Durable, non-corroding, easily cleaned. Guaranteed. Backed by 65 years' pump-making experience. Send today for free book "How to Spray" and ask for expert advice on your requirements. Both free.

The Goulds Mfg. Co.

Main Office and Works
 Seneca Falls, N.Y.
 Branches: Chicago,
 Houston, Boston,
 New York,
 Atlanta



More than 100,000 Farmers and Fruit Growers Use the STANDARD SPRAY PUMP

With it they spray their tallest orchard trees from the ground in half the time required by others. The knapsack attachment enables them to spray their potatoes and low growing crops at the rate of an acre an hour or better. They whitewash their barns and chicken coops and spray "dip" on their live stock with the Standard Spray Pump.

Made throughout of brass, with nothing to wear out or break, the Standard Spray Pump lasts a lifetime and pays for itself over and over again.

Warranted 5 Years. Price \$4. Prepaid. (West of Denver \$5.) Money back if not satisfied.

Send no money but write today for our Special Offer and Catalog D.

The Standard Stamping Co.
 349 Main St., Marysville, O.



SPRAY Signs of a Good Sprayer

High Pressure—to throw a strong, fine spray.
 Pump—of sufficient capacity under slow speed.
 Agitator—to keep liquid well stirred.
 Strainer Cleaning—to avoid clogging and choking.

The "Ospraymo" Line

of automatic sprayers are down to the moment. Power is ample. They throw a fine spray, under high pressure, which reaches every part of leaf or tree. You are not troubled with nozzles choking, the most annoying thing in spraying. Ask any user. You go right along without delays—when the job is done, it's done right. Automatic Brushes with Mechanical Agitators are furnished with Empire King Barrel Pump and Watson-Osraymo Potato Sprayers, also with all LEADER Gasoline Engine Machines.

We Make a Sprayer for Every Need—

from Bucket and Knapsack Sprayers to the large Power Orchard Rigs. Sold by leading dealers. Ask for Field's "Ospraymo" Sprayers. Write direct for catalog, formula and spraying directions.

FIELD FORCE PUMP CO., Dept. B, Elmira, N. Y.



Buggy Bargains

—Get Our Big Book

See How

We Save You \$25

and up. Buy of the manufacturer direct from factory.

Shows Over 200 Newest Styles

Reduced Prices for 1915



Most liberal offer. We sell direct to users only. No agents. Largest manufacturers in world selling direct. Elkhart owners everywhere. Large output—one small profit—big saving to you. FREE book tells all. Postal brings it. Elkhart Carriage & Harness Mfg. Co. Elkhart, Ind.



We Ship for Your Examination and Approval

60 Days' Free Trial

BEAN POWER SPRAYERS



—drive the material on at high pressure and have non-rusting ball valves, porcelain-lined cylinders, Bean patented pressure regulators and many other distinctive advantages. On account of their low-down, compact, perfectly balanced construction they are as easily handled on hilly ground as on the level.

SEND FOR CATALOG 28-A

It illustrates and describes the entire Bean line of Hand and Power Sprayers and Pump Accessories. Send now.

BEAN SPRAY PUMP CO.

10 Hosmer St., Lansing, Mich.
 15 Julian St., San Jose, Cal.

RHODES DOUBLE CUT PRUNING SHEAR

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

Pat'd June 2, 1903.

RHODES MFG. CO.,
532 S. DIVISION AVE., GRAND RAPIDS, MICH.

Maurice Costello

Famous Moving Picture Actor, says:

"The great thing about Tuxedo is the fact that it gives full fragrance and flavor together with extreme mildness. I find Tuxedo not only the height of pipe enjoyment but a distinct benefit because it gives just the proper degree of relaxation. Tuxedo is undoubtedly an exceptional tobacco."

Maurice Costello



"As Popular As The Movies"—TUXEDO

Tuxedo answers every smoke desire—every little palate craving, every longing for the one Perfect Pipe and Cigarette tobacco. No matter when or how you smoke Tuxedo it sends right into your heart a glimmer of Gladsome Sunshine. And you can just about hear the honeybees buzz in the far-off gardens.

Tuxedo

The Perfect Tobacco for Pipe and Cigarette

Sings into your system a song of keen delight. It spreads real happiness and cheer because it's smokeable, lovable, all day, all night—no matter how the weather fits. Tuxedo's flavor is so enticingly mild and delicately fragrant it will not irritate the most sensitive throat.

Simply the choicest mild leaves of grand old Kentucky Burley—ripe, rich, fragrant and mellow—made into delicious tobacco that smokes as smooth as cream. That's Tuxedo.

YOU CAN BUY TUXEDO EVERYWHERE

Convenient, glassine-wrapped, moisture-proof pouch. . . . **5c** Famous green tin, with gold lettering, curved to fit pocket **10c**
In Tin Humidors 40c and 80c In Glass Humidors 50c and 90c

THE AMERICAN TOBACCO COMPANY

For its wonderful accuracy, its safety and convenience, and its effectiveness for small game and target shooting, you should buy

The Marlin

.22 CALIBRE

Repeating Rifle

The Marlin 22 pump-action repeater has simple, quick mechanism and strong, safety construction. Has sensible, visible hammer. It takes down easily. You can look through the barrel—it cleans from both ends.

Its Solid Steel Top protects your face and eyes against injury from defective cartridges, from shells, powder and gases. The Side Ejection throws shells away to the side—never up across your line of sight.

Handles all .22 short, .22 long and .22 long-rifle cartridges, including the hollow-point hunting cartridges. Accurate to 200 yards. A perfect gun for rabbits, squirrels, hawks, crows, etc.

Marlin 22 repeaters also made with lever action; ask your dealer.

The Marlin Firearms Co.,
39 Willow St., New Haven, Conn.

Model 20, as illustrated, 24-inch octagon barrel, 15 or 25 shots, \$11.50.
Model 29, 23-inch round barrel, 15 shots, \$9.25.

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Pruning Young Orchards

THE object of pruning is to give the trees a symmetrical form, ventilation in the interior of the top, and strength of the branches to bear a full crop without damage through breaking, says The Farmers' Review. As different classes of trees require totally different treatment, it is necessary to speak of them separately. A two-year-old apple tree, as a rule, has a top when it comes from the nursery. If the branches start, say, two or two and one-half feet from the ground and are in desirable positions around the body, differing in height from four to ten inches, four or five may be retained to form the permanent skeleton. All should be cut back to a strong bud that will make the leader for next season and should be left no longer than one-third the previous year's growth.

If the tree is large and has strong branches about a foot above, two or three, separated several inches, but not directly above one another, may be left again and cut back as the others. Every other branch should be removed and the leader cut back to within a few inches of the uppermost limb. As ventilation and the admission of sunlight into the top are the main objects of pruning, it becomes needful to suppress new growth in the interior of the top to that extent, and to insure symmetrical proportions throughout, much can be done during the growing season by pinching back branches which are too vigorous, or encouraging the development of others where they will add to the symmetrical form.



The above cut makes plain the suggestion we often make, which is in cutting off large limbs you first make a cut on the lower side not quite half way through the limb. Then by cutting on the upper side, the limb drops without splitting, as it is liable to do in the branch at the left hand side of the above illustration.

A young apple tree, properly started, should require no removal of large branches unless they should become affected with disease or damaged otherwise. Systematic thinning, however, and the removal of watersprouts will be necessary during its life.

Pruning the peach tree requires quite different treatment. The fruit buds of the peach are developed on the young branches growing each year, and the growth of these young branches must be encouraged through judicious pruning. A tree left to itself will, in the course of a few years, present bare limbs to the height of ten or twelve feet and its fruit will be produced at their extremities. Such treatment makes picking the fruit not only very difficult, but also results, as it did this year in my locality, in badly damaged trees through breakage. Beginning with trees one or two years old, my method is to prepare the land as for apple trees and lay it off twenty feet each way. Set the trees a little deeper than they stood in the nursery, examine and trim out damaged roots and cut off all branches, taking care, however, not to cut too close, for this might damage undeveloped buds which will be needed in the formation of the top. Next, cut back the body to the height at which you want to start the top. Commence cultivation as early as the ground will work well in the spring. When growth starts, remove all branches not wanted for the skeleton and take care to leave only one branch in a place. Keep the tree open in the center and encourage the well-balanced and symmetrical formation of the top by a little pruning during the growing season.

North Carolina Orcharding

Editor Green's Fruit Grower:—This is being written on Oakwood Mountain in northwest North Carolina, a section that has within a half dozen years come into notable prominence through the very fine quality of the apples grown and the painstaking care of orchards and fruits by the new owners who are now almost the exclusive owners of these orchards once as

famous because of the excellence of the cider made and the national reputation of the applejack made therefrom, as through a destruction of the industry by the 70,000 vote of Prohibition that overwhelmed the state later on.

The rejuvenation of these old neglected orchards by their new owners is a matter of wonder. After Prohibition came 70,000 strong, the apple industry met with a great reverse. Selling the apple into channels of trade was thought an impossibility, and so orchards were neglected, often tangled thickets filled in between the rows, and every variety of fungous disease and insect pest grew and multiplied and "waxed exceedingly fat." Today all these are absent and unknown, and vigorous growing orchards, cleaned of intruders of all kinds, abundant in the fairest of fruit, fine in quality and flavor, rich in color, fills the boxes in season and brings the top prices.

Today I was in the now noted "Gold Medal orchards" on Oakwood Mountain, an altitude of 1,800 feet, and within the "Thermal belt" where dew never falls, or the white frost never appears or blights. A bearing orchard of 3,200 trees, mostly the Red Limbertwigs, a most uniform apple in size and a remarkable keeper, the last of the 1913 cropping to market today, May 25th. The trees were full of a corps of men and boys with spring nippers, thinning the fruit down to an apple, each five inches. All the past spring, the plows, cultivators, fertilizer sifters, sprayers and aphid hunters have been busy, as was the thinners, but not only here, but all over the brushy mountain range, for orchards now have come into sight from most of the great round tops of these miniature mountains. The highest, Poor's Knob, 2,700 feet, is crowned by the great Smoot orchard of about 4,000 trees; and not only these, but land is being rapidly cleared in all directions and trees set by the 10,000 and "Hale" and "Elberta" peaches by the hundred scores. The disintegrated red granite soil of these hills, rich with loose stone, seems especially adapted to apple growing, and I find strawberry growing also, for on these hills I find the finest of wild strawberries by the acre, reddening the ground, a feast for him who will pick.

While the Limbertwig, Winesap, Virginia Beauties and a few others were the most accepted apples by the older owners, the new orchards are being set with Delicious and others of the most modern famed varieties; not only hereabouts, but in the Mt. Airy, Boone and other centers, and promise much. These men are students of their business, and Green's Fruit Grower seems to be their orchard New Testament and studied diligently.

The Fruit Exchange, of which the greater part of these men are members, is a "live wire" and has proved to be a great promoter of trade, a protector, and discriminative for needed betterments in picking, boxing and grading for a market that now expects a "square pack." A great advance has been made in the winter storing of apples by Mr. A. P. Gould of the "Gold Medal" orchard by the erection of a double walled, cement storage room made on the exact principle of a Thermos bottle, and if located right will hold its contents unchanged at below 40 degrees, and a grader that weighs each individual apple and puts it in its right receptacle hence giving the apples eight grades, and impossible to put grade A into grade H, or the reverse. It's a story of adventure for these men from the north, most of them, to come here and recreate these old orchards; free them from their enemies—invisible and winged; grow a fruit that commands the attention of the market; and win score cards, red and blue ribbons by the score—this orchard has over forty prizes, sweepstakes and the like in plenty, and actually filled the White House cellar with pie material, and I think worthy of a few "stickfuls" of assorted lead in Green's Fruit Grower.—John Gould, N. C.

Kitchen Table on Casters

Have casters put on the kitchen table, and you will find it will be a great help toward saving steps. When work is being done at the sink, the table may be rolled near, or when cooking is being done it may be placed near the stove, with the necessary cooking utensils upon it, says Miriam M. Haynes, Colorado Agricultural College, Fort Collins, Colo.

Apples So

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SETTING

Prof. H. A. ment of Agr practical tal by showing t trees of goo from the n with his sp portant poin are conspicu ties of pear about as th long limbs b bend over t severe cutti tion of mor should be a will bear fr ference of th the shape of the young tr in young tre advantage b descend und crossing bra ly but tend additional b fruit.

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Apples Sold at Good Prices in Bad Year

Europe, on both the foreign and the domestic demand, showed that in spite of the disturbed conditions of export trade considerable quantities of apples are going abroad mainly to British and Norwegian ports; and that at home men who have worked up their reputation for honest pack and good fruit are receiving good prices, says Pennsylvania Farmer. A well-known New Jersey grower who has been taking prizes on barrels and boxes of apples at the state horticultural society and the Inter-State fair for several years and building up a trade upon the reputation so gained, recently sold 1,200 barrels of standard market varieties at \$4 per barrel without leaving his home; and that a Virginia grower who sells most of her fruit in the Philadelphia market was having no trouble in getting good prices through her distributor, even though the Philadelphia railway sidings have a daily "left over" of 50 to 100 cars. Indeed her fruit is all sold by telephone before it reaches the city. These instances Prof. Kains cited to show that good fruit honestly packed is in demand during seasons of glut.

Other points Prof. Kains emphasized as necessary to market fruit were choice of commercial varieties for the definite market in which they are to be sold; for markets, like individuals, have their preferences. Cultivation, spraying, fertilizing and pruning according to the methods advocated by the College and by business fruit growers, were also discussed briefly. More emphasis was given to thinning which is becoming annually more popular among business fruit growers. One very striking instance of this kind was a New York fruit grower who has made his Baldwin orchard bear 15 crops in 17 years, and would have had 17 but for late frosts. He has found it much more profitable to have a moderate crop of highly colored, uniform sized Baldwins each year than a big crop of irregular fruit one year and nothing the next. The uniform fruit has always sold at good prices whereas the irregular stuff of those who do not thin the fruit has been slow of sale at much lower figures. Prof. Kains also showed that fruit so grown and handled can be more economically graded and better packed either in barrels or boxes and that the market is waiting and eager for first-class fruit.

In closing his first address, Prof. Kains discussed the feasibility of co-operation where it can be worked, and its infeasible features. He gave instances of success. In each of these the growers were practically forced to come together. Where there is not this necessity and where individual growers have already worked up profitable trade he sees no reason why co-operation should be agitated, for in itself it is not a panacea for all ills of marketing. It won't sell poor fruit or anything else at high prices.

SETTING AND PRUNING TREES

Prof. H. A. Surface, of the State Department of Agriculture, illustrated his very practical talk on pruning young fruit trees by showing how he would treat individual trees of good and bad form as received from the nursery. As he was working with his specimens he emphasized important points among which the following are conspicuous. Let strong growing varieties of pears, such as Kieffer, grow upward about as they choose, because when the long limbs become full of fruit they will bend over to the ground, and because severe cutting only tends to the production of more wood growth. The object should be a good, low-headed tree which will bear fruit from center to circumference of the tree. Always bear in mind the shape of the mature tree while pruning the young one. Interior crossing branches in young trees are not necessarily a disadvantage because when the main limbs descend under their weight of fruit, these crossing branches no longer cross seriously but tend to fill in the top and make additional bearing wood and high colored fruit.

Prof. Surface aims to plant his trees three inches deeper than they stood in the nursery row, and to have the new heads start three to six inches from the ground for peaches and a foot to two feet for apples and pears. The main advantages of these low-headed trees he considers to be protection from injuries by careless cultivators, from wind in-

juries such as blowing off the fruit, and the natural mulching of the ground by the trees themselves. The limbs when loaded rest on the ground and thus brace themselves and the trees never need cultivation underneath them because weed growth is prevented and the soil is kept moist by accumulated leaves as well as the shade. Beyond the spread of the branches he practices careful cultivation.

As to the roots he cuts these back severely so as to force root development; for experience with various methods of root pruning has taught him that he can get greater growth where the roots are heavily cut back than where they are left long and sprawling. In setting such trees he would spread out the roots so as to make as even a distribution in the soil as possible, even holding some where he wanted them until the soil has been tramped down upon them. Thus a firmly braced tree would result.

CARE OF PEACH TREES

Prof. F. R. Stevens, of the Lehigh Valley R. R., discussed growing and general care of the peach. Among the special points he emphasized was the necessity of perfect drainage. This he considers of even more importance than the so-called ideal peach soil—sandy loam. For he showed how drainage has made certain orchards of his section profitable when fertilization and cultivation had previously been unable to do so. On the other hand, he emphasized the need of both cultivation and fertilization, cover cropping and other general orchard care.

His Orchard Plans

We walked through his orchard and were amazed at the similarity in form and growth that was apparent among all trees of the same age and variety. The owner explained that he had trained every tree in the orchard and for the past sixteen years he had been the personal supervisor of every man who assisted in the work. Each spring every tree had been given an inspection and pruned when necessary. It was the constant observation of the growth of the trees that enabled the farmer to assist nature in the forming of his orchard. It was not superficial and irregular pruning that formed trees which were capable of producing a maximum crop of fruit with the minimum expense for picking, says Farmer's Guide.

The grower said: "Good pruning is a big saver of money, and I never allow one of my trees to become over eighteen feet in height. My men must be able to pick every apple in the orchard with the aid of a 12-foot step-ladder. They can do this if the trees are properly trained, and that is one reason why apple trees should receive yearly pruning. It means a bigger profit for the grower every year that the apples are harvested because good pruning means economy in picking." Pruning cannot be entirely learned from books, but must be acquired by a careful observation of the work of nature. It cannot be done by rule, but the eye and the judgment can be trained by years of practical experience. Some men easily learn to develop an ideal apple tree, and others seem scarcely able to acquire the fine art of assisting nature in her work. There are a few simple rules that are fundamental, and these can be studied before beginning work in the orchard, but the grower must expect no brilliant success from his first efforts, and he should endeavor to work with a man who has learned his trade by a long apprenticeship in the orchards of the community.

The young tree loses a part of its root system when it is removed from the nursery, and if the top is not reduced before the tree is placed in the ground, it means partial starvation. The small number of roots cannot take up enough nourishment to support the larger expanse.

We'll All Walk Soon

"If the high cost of living keeps on, the rich themselves will feel the pinch of it."

The speaker was Brand Whitlock, mayor of Toledo. He continued:

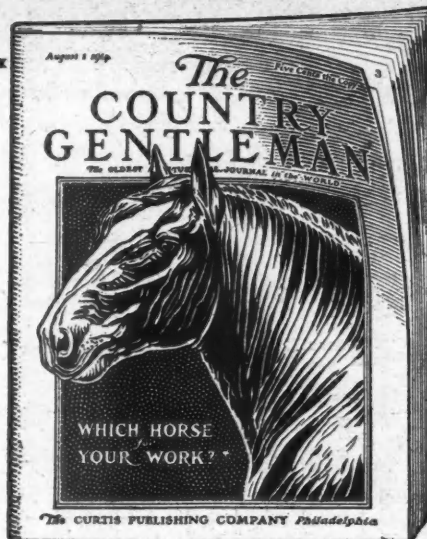
"I know a Toledo banker who has already begun to retrench. His daughter said to him the other day:

"Father, dear, I need a new fall riding habit."

"'Can't afford it,' the banker growled.

"But father, what am I to do without a riding habit?"

"Get the walking habit."



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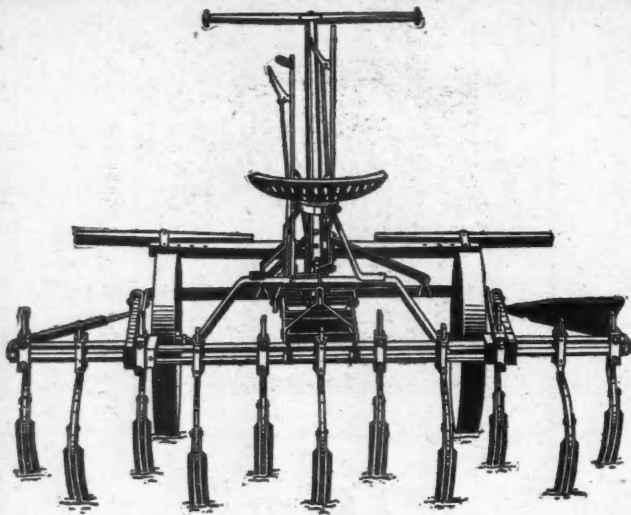
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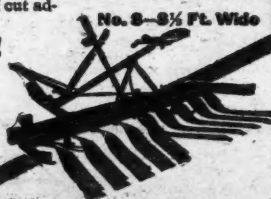
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Planting a Pear Orchard

AT the present time the pear is receiving much more attention from fruit growers than heretofore, partly because of the increased demand for its fruit, and partly its successful cultivation being better understood. In ancient days it received greater attention than the apple, being known in cultivation from a period of remote antiquity, writers tell us, says the Practical Farmer.

When considering the setting out of an orchard a deep soil is important, a moderately stiff soil is unobjectionable, but not a wet, cold one. The roots of the pear are penetrating rather than spreading, and if the soil is cold and clayey the growth of the tree will be at the expense of fruiting, and what fruit is produced will be of inferior quality.

The distance apart pears should be planted in the row may be placed at 30 feet, with 25 feet between the rows. Thrifty trees will need such space, although for some years peach trees or some farm crop could be grown between the trees. Peach trees would be past their usefulness before the pears would require the space. But whatever it be that is placed between the pear trees, see to it that the food these pear trees require is not encroached on by whatever else may be growing near them, whether peach trees, agricultural crops or weeds. The roots of trees are usually considered to extend horizontally as far as their branches do, therefore, as the trees grow and branches spread they need the use of the soil that their branches cover, in a wider circle every year. For several years after the planting of the trees the surface of the soil beneath them should be kept clean by cultivation. Should it not be considered over-fertile, apply a surface dressing of manure to it every autumn or in early spring, then harrow occasionally through the summer, to keep down weeds and to promote moisture of the soil. Many advocate, and apparently from profitable experience, that cultivated soil in the way explained is better for the trees until such times as bearing fruit commences, after which grass may be allowed to grow beneath them, but this grass should be permitted to lie under the trees when cut, or, if taken away, then the ground be fertilized to make good to it what the grass had extracted.

WHEN TO PLANT

Pear trees should be planted either in early fall or early spring. In the fall the writer has found it far better to plant early than late. No need to wait for the fall of the leaves; do as the nurseryman does who ships such trees—strip off all leaves as soon as the trees are dug. It will be anticipating nature but a week or two if done in September or October, and before winter sets in the trees will be rooted, practically insuring their safety going through the winter. The colder the usual winter the earlier the planting should be done. A thrifty 2-year-old pear tree is a good size to plant, perhaps a 3-year-one in some cases. A 2-year one should be 3 to 4 feet high, with a few branches. These should be delivered to the ground in a fresh state, the roots having been kept damp from the time they were dug. Have the holes all ready to receive them. The plants should be as deep as before, or not more than an inch deeper, with roots spread out naturally. The soil thrown in should be as fine as possible, in order that the roots may have it around them top and bottom, working it in with a stick or one's fingers. As soon as the roots are well covered, commence tamping it down with a small rammer, keeping it at work until the hole is half filled. What has been said of planting so far has been having in mind fall planting. It does not differ from spring planting except that in spring there are no leaves to strip off, and there is no need to water at planting. But whichever season it be, a thick mulching of some material will be beneficial, in autumn to keep out the frost of winter, and in spring to keep the soil moist during the heat of summer.

VARIETIES TO PLANT

The question of what varieties of pears to plant is one of great importance. Orchards are set out mainly for profit, therefore one needs to have the most of

his trees of but few kinds. The present season up to the close of August has found, in Philadelphia and New York markets, chiefly Clapp's Favorite and Bartlett, the latter in the lead. The reason for the difference is found in poor keeping quality of Clapp's Favorite, large, beautiful, delicious pear that it is. Its sunny side is of a brilliant red, while its juiciness and enticing flavor are of the best. In earliness and beauty and quality—all save its shipping—it easily leads all others. By gathering it from the tree in the early weeks of August it can be shipped some distance, so that when markets are close to hand it may be set out for first sales. Next to it in earliness and for marketing, the Bartlett is the favorite. An early and a sure bearer and of a good yellow color when ripe, and of first-class quality, it leads all pears for general cultivation. It would form the bulk of the planting of all familiar with it for an early crop. For a late crop the following are to be preferred in the order listed: Lawrence, Sheldon, Anjou and Seckel. The Seckel is the standard of excellence in pears, but it is small and does not produce well until of more age than others. The other three are of good size, Anjou very large, and all are good keepers. Even in the old way of keeping pears in cold cellars, these could be kept until New Year's. Now, with cold storage, they are in evidence in May. In south New Jersey, in the light, sandy soil of the section, the Kieffer pear fills whole orchards, where its fruit is in great demand for canning purposes chiefly, though those familiar with it know that when well ripened it is not to be despised for eating out of hand.

For those who wish to plant for home use and not particularly for market the following sorts can be recommended in addition to those already named as preferable for market: Clairgeau, Duchesse, Louise Bonne, Vt. Beauty, Worden Seckel, the latter an improved Seckel. Nearly all these the writer has fruited himself in his time. When wanted for cooking purposes chiefly Easter Beurre can be recommended, and the Kieffer, already mentioned, is excellent for the purpose.

C. A. Green's Comments: My selection of varieties of pears would be Wilder Early, Gans, Clapp's Bartlett, Sheldon, Worden Seckel, Seckel, Flemish Beauty, Duchesse, Kieffer, Anjou.

The Value of Grapes

The grape is one of the oldest fruits. It is spoken of in the Bible where the spies of the children of Israel went to view the promised land. They brought back immense clusters of grapes. Grapes are the most wholesome of fruits, though all fruits are wholesome if considerably eaten. Many parts of this country are devoted almost exclusively to grape growing. Where the grape succeeds it is exceedingly profitable. But few of our readers are aware of the immense yields that are possible. One grape grower in the Keuka Lake region of New York state reports that from three acres of his vineyard he gathered nine and one-half tons of grapes which sold at \$80 per ton. There is something fascinating about the planting and growing of a vineyard. I know of no more beautiful sight than a vineyard in fruit. When a young man I was fascinated with the idea of planting a vineyard, but was prevented by the counsel of my older friends. But after all it is for the village and farm home, or even for the city home, that a grapevine is the greatest blessing. The vine for ornament alone is exceedingly attractive, its broad leaves giving desirable shade for arbors or piazzas. There is no locality where the grape will produce better than when twined along the sills of the house or over verandas. Thus a grapevine that may be brought for 15 cents may do much to beautify and make a home attractive. The grapevine is one of the most easily planted and the most certain to grow. This is shown by the fact that nurserymen succeed in making a piece of grapevine grow without any roots at all. How easy then must it be for any person to make a well-rooted grape vine flourish about his home. Plant grape vines this spring.

THE MOST POPULAR APPLE

More Baldwins Grown Than Any Other Variety

More Baldwin apples are produced in the United States than any other variety, and the Ben Davis is a close second. This information was obtained by the bureau of crop estimates of the Department of Agriculture at Washington. The percentages of leading varieties produced in a normal year are here shown: Baldwin, 13.4; Ben Davis, 13.3; Northern Spy, 6.1; Winesap, 5.1; Rhode Island Greenings, 4.7; Jonathan, 3.6; Rome Beauty, 3.1; Early Harvest, 2.8; Grimes' Golden, 2.2; Wealthy, 2.2; York Imperial, 2.1; Maiden Blush, 2. There is less than 2 per cent. of every other variety. It takes these twelve varieties to make up 60.6 per cent. of the total crop, and twenty-three other varieties make 29 per cent., unnamed varieties accounting for the remaining 10 per cent.

Contrary to general opinion Missouri is not the leading Ben Davis state. In Arkansas 44 per cent., in Illinois 37.8 per cent., and in Missouri 34.2 per cent. of the total crop is Ben Davis. It will have to be confessed, however, that Missouri produces more Ben Davis apples than any other state, even if its proportion of them is less than in Arkansas and Illinois.

In the East, the Baldwin is the leading variety. In California the yellow Newton and the yellow Bellflower are the principal apples. The Jonathan leads in Washington.

The above figures from the U. S. Report at Washington, D. C., is doubtless correct. I regard it unfortunate that more and better varieties of apples should not have been planted. Baldwin and Ben Davis can be grown cheaper than other varieties of better quality. These are long keepers also, and good shippers and good color. But if better eating apples were grown, more would be consumed. The fact is, there are few who are familiar with Melon, Mother, McIntosh Red, Banana, Wine Sap and Hubbardston.

Factors in Apple Orchard Management

Apple growing in Indiana has become a very important industry, says Farmer's Guide. There is a vast number of acres adapted to apple growing, the climatic conditions are good, the soil will produce apples of high quality, and market conditions are excellent. Yet with all these advantages, it requires close attention to all details in order to succeed. Success in apple growing depends largely upon the "man behind the gun."

Markets in every city are demanding apples of high quality. In studying the markets for the last few years, it is found that the apples of high quality are gradually coming to the front and bringing top prices, while those of poor quality are bringing less money. It is quite important that fruit growers should plant only those of high quality. The same variety will not be adapted to all parts of the state. For practical purposes the state can be divided into two sections, northern and southern. In the northern portion the varieties Grimes, Jonathan, Spy, Greening and Baldwin are well adapted for growth and will produce apples of high quality. In the southern portion of the state Akin, Grimes, Jonathan, Stayman, Winesap, York and Ben Davis will yield fruit of good quality. Too many orchards are not proving as they should, on account of having selected varieties of poor quality. Thousands of trees are being planted each year that will never live to bear profitable crops.

Under wrong impressions, many plunge into the fruit business thinking that the project is all income and not much outgo, but when they once realize the work necessary to grow a tree, and the continued fight necessary to protect them from insects and fungous diseases, they grow discouraged and fail to accomplish an end. There are farms in Indiana with good orchards that are sadly neglected, that with proper management might be made to produce more clear profit than all the rest of the farm.

The average size of the Indiana orchard is about three acres. Very few of these home orchards are paying even interest on the money invested in the land. In 1910, the 10,000,000 fruit trees in Indiana produced less than 5,000,000 bushels of fruit. In order to remedy this lack of production every fruit grower and farmer should attend demonstration meetings

and observe the best methods used for the control of the home orchard.

Warning Against "Pedigreed Stock"

Many farmers throughout the country are now beginning to think seriously of getting some young fruit trees to be set out early next spring, says A. P. Swallow, Deputy State Entomologist, in The Farmer's Guide. Some of these are men who intend to go into orcharding on a commercial basis, others are getting a few trees for the home orchard. Each of these men is confronted with the problem of where and what to buy. It is to help the purchaser who has an interest in his own fruit and that of his neighbors that this is written. It is safe to get trees from any locality, as they will adapt themselves to conditions if they are the right varieties and are in good condition. Varieties must be chosen, however, that are hardy and adapted to the local conditions. It is the variety of the tree and not its place of growth that counts. This being the case, you should be first of all concerned with choosing the man with whom you are to deal. He must be one who has a clean business record, whose word is good, whose stock is in the best of condition. It is not safe to buy nursery stock from agents whom you know nothing of. Never buy your stock from a nursery that does not use every possible effort to keep it in the best of condition. It is sure to fall below standard in something.

The poor orchards today are not the nurserymen's fault, but that of the buyer. If he will insist on the right kind of stock and see to it that he gets it, the negligent and dishonest nurseryman must go out of business, and the man who gives you a square deal will prosper and continue in his present policies.

Some men prefer a three or four-year old tree to start in the orchard, but the majority agree that a one or two-year old tree gives much better results. Every year, more people are buying one-year stock in preference to the two-year-old.

One seemingly convincing argument put up to the buyer is the "pedigreed stock" proposition. While it is true that the scions taken from a heavy bearing tree should produce another one of good quality, still you cannot depend on its making a tree that is in every respect as good and of as excellent bearing qualities as the one from which the scions were taken. It needs more than the scion to make the tree strong, healthy and a good bearer. Its condition at the time of transplanting and its care afterward are what count.

Age of Bearing

Editor Green's Fruit Grower:—How long after setting one year No. 1 trees from the nursery on sandy, stony loam with a well drained southern exposure, will the following come into full bearing: One year sour cherry, Red June plum, Astrachan apple, McIntosh Red apple, Bosc pear? Will the above soil be adapted to the pear, and what is the average yield per tree of above varieties.—Geo. W. Burneau, Conn.

Reply: So many things enter into the problem of early or late fruiting of certain trees that it would simply be a matter of guesswork as to when such trees as you speak of will come into bearing. Rapid growing trees, trees growing on exceedingly rich soil, do not come into bearing so quick as slow growing trees planted on light, thin soil. Generally speaking, it is not desirable or promotive of longevity for a tree to bear fruit at a very early age, and yet dwarf pear trees and other fruit trees often bear specimens of fruit the second year after planting. The main thing is to get the trees planted. Any enterprise that is started soon comes to the profitable stage. Time slips away rapidly. Men sixty years old or older have planted orchards, feeling that there was no chance of their seeing them come into bearing, and yet to their surprise they have lived to see these orchards bearing fine crops of fruit.

Testimonial

Washington, D. C., Dec. 15, 1914
Mr. Chas. A. Green:

I enclose check for \$1.00 in payment of my subscription for three years from May, 1913.

I appreciate your paper very highly. Its variety is great and its spirit clean and wholesome.—Earle Wilkey.

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is food for thought
as well as for crops
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When shipments were interrupted by the war, it was estimated that there was enough Potash on hand in the United States to provide two and three per cent. Potash in mixed fertilizers for this spring's trade. Some manufacturers had more than enough for these percentages.

Since then minor sources of Potash have been fully utilized, and additional shipments from the usual source are still being received.

The supply is below normal, but this need not prevent farmers securing some Potash, nor should it lead farmers to decide not to use fertilizers. There is no reason to return to the out-of-date goods without Potash, although some authorities may try to "wish" them on us.

We have not used enough Potash in the past. The largest annual import of Potash was only one-seventieth of the Potash *taken from the soil* by our 1914 corn crop and only one-fifteenth of the Potash lost every year in drainage water. Spring crops use from two to ten times as much Potash as Phosphoric Acid. Get as much Potash in the fertilizer as possible. A few firms are offering to furnish from four to ten per cent.

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Orchard Attachment if wanted 4 or 6 Row

Comparative Dusting and Spraying Experiments

By DONALD REDDICK and C. R. CROSBY, of Ithaca, N. Y.

Delivered before the Western New York Horticultural Society, at Rochester, N. Y., January 27, 1915

Continued from last Month

Cost of Application. The total cost of application depends upon the time involved, the quantities of materials used, and their cost. In figuring the cost of application the following initial costs have been used: Man labor \$.20 per hour, horse labor \$.10 per hour, lime-sulfur solution \$.12 per gallon, sulfur \$.20 per 100 pounds, arsenate of lead \$.18 per pound, powdered gypsum and hydrated lime \$.00 per ton. Wear and tear on machinery is not included in any case. These figures are arbitrarily chosen and perhaps none of them are exactly correct. However, they do not detract materially from the relative average cost per tree of the various mixtures.

The size and shape of the trees increased the time required for spraying, and Mr. Glidden used an hour more time in spraying these trees than he did in treating the same number of trees of the same size and age in another part of the orchard. The figures, however, do not include the time involved in driving to and from the orchard nor in filling the tank, and it should be remembered that enough material for running the duster a half day can be carried easily on the wagon.

The materials for spraying are not so expensive as are those for dusting, but that the time involved is so much greater that the two operations cost about the same. By far the most important point, however, is the time involved. By the dust method Mr. Glidden could protect at least five times as many trees in a given time as he could with his sprayer.

In the Catchpole orchard where the trees are smaller and better shaped for spraying and where the facilities for rapid spraying are exceptional, the total cost per tree for each spraying (\$.056) is nearly two cents less than the cheapest application of dust. Here again the cost of filling and of driving to and from the orchard is not included in the spraying expenses. On the same basis and under the conditions of work in the Catchpole orchard dusting was only two and one-half times as rapid as spraying.

Results. From the foregoing discussion it will be seen that the only orchard in which satisfactory results in scab control could be expected is the Glidden orchard at Holley. The averages were secured by classifying all the apples from three random trees in each plat.

Commercial Grade. First of all it will be noted from the table that the percentage of sound apples on the untreated plat is very low (5 per cent). The percentage of sound apples from two of the dusted plats is somewhat higher than from the sprayed plat. Whether the lower percentage of sound fruit on the plat dusted with the mixture containing lime as a diluent is to be attributed to the deleterious action of lime or to the fact that a heavy shower fell on that plat almost immediately after the first application was made is uncertain, but the latter explanation seems to be more plausible.

Scab Control. Scab is classified under two columns because the treatments given could not have been expected to prevent the late infection. It is very interesting to compare the two columns, however, for they show that the amount of late scab is directly proportional to the amount of early infection. A goodly amount of early infection occurred on the check plat (34 per cent.), and the control on the sprayed plat and two of the dusted plats is very satisfactory.

Insect Control. The table is most remarkable in showing almost complete absence of codling moth in the orchard. The experiment, therefore, throws no further light on the question of codling moth control although all previous experiments have been in favor of the dust mixture, including those of 1912 when the mixture contained only 10 per cent. lead arsenate.

The first application was made too late to be fully effective against bud moth, green fruit worm, and leaf roller. In the case of the two latter pests, which, combined, damaged 23 per cent. of the fruit on the untreated plat, better control was secured with the dust mixtures than with

liquid although the amount of lead arsenate applied per tree at the first application was actually greater on the sprayed plat than on two of the dusted ones.

DATA FROM THE CATCHPOLE ORCHARD

The data from this orchard are valuable chiefly in bringing most forcibly to the attention of fruit growers a point frequently emphasized by the senior author as one of vital importance in scab control. The difference in date of application between this orchard and the Glidden orchard was usually only one day, yet in one orchard excellent results were secured and in the other very poor control resulted. The difference may be attributed to a rain on North Rose the night of May 29 which did not occur at Holley and to the drenching torrent of June 19 coming a few hours after the application and before the materials had become set, whereas at Holley the trees were treated June 18 and the materials, particularly the dust preparations, probably set during the night.

The data on insect control are of little value because on untreated trees the percentage of injury is exceedingly small, in some cases lower than on some of the treated plats.

It was found that the amount of scab on the untreated plat was twice that of the Glidden orchard. This is attributed to the shape of the trees, the dense covering of fallen leaves on the ground under the trees, and to the fact that more infection periods occurred at North Rose than at Holley. The most notable of these was a period of rain and fog on June 21, 22, 23 and 24 which, judging from records, was more favorable for infection at North Rose than at Holley.

Lime-sulfur solution gave decidedly better control of scab than did any of the dust preparations although the percentage of control with lime-sulfur was far from what it should have been. It is believed that the solution had become partially set on the foliage before the rain of June 19 set in, whereas there had been no condition favorable for the setting of the dust mixtures.

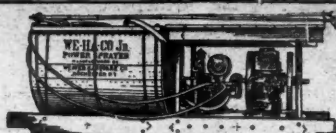
In conclusion it should be said that the conditions in this orchard were exceedingly unfavorable for dusting on every occasion except the first application which, as it happened, was of little value anyway. The high and gusty wind following the rain period on May 30 and a strong wind preceding the downpour on June 19 made satisfactory dusting impossible and the work would not have been done except for the necessity of moving on to the next orchard. Two of the dusted plats happened to be located where there was full sweep of the wind.

FRIEDAH ORCHARD

The results secured in the Friedah orchard as was anticipated are little better than those from the Catchpole orchard and need not be detailed here.

GENERALIZATIONS

1. First of all, the experiment shows most strikingly that the mixture must be applied at the proper time.
2. The dust method is applicable in large old trees where it is most needed.
3. Three to six times as many trees may be covered in a given time with dust as with spray.
4. The total cost per tree of treating trees with dry materials is not greater than for spraying them.
5. A mixture containing 10 per cent. arsenate of lead is apparently sufficient to control the common insects that chew.
6. Two to three pounds of dust mixture should be applied per tree each time.
7. For the present the dusting mixture should contain 90 per cent. exceedingly finely ground sulfur and 10 per cent. of lead arsenate.
8. If the grower wishes to make his own mixtures he should secure a suitable mixing machine.
9. There have been no reports of injury of any kind from breathing the dust.
10. The sprayer must be used for dormant treatments, and temporarily at least the varieties susceptible to scab should be sprayed in preference to dusted.



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Budding and Grafting

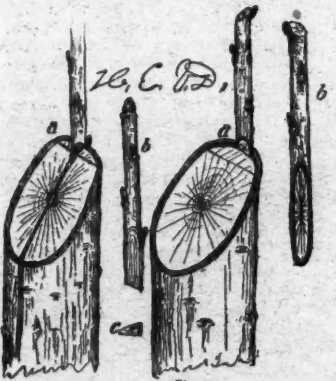
SCIIONS should be cut from bearing trees in March and stored in moist sand in a cellar. This is for the purpose of keeping the buds dormant until time to use them. These scions must be cut from last season's growth and preferably from the top of the tree as we generally find the longest growths at the ends of the branches towards the top of the trees. When ready to use, these twigs may be cut into lengths of about three and a half to four inches, each containing three or four buds.

If for root grafting the work may be done any time towards the latter part of March or early in April. This root grafting is a very simple process and can be done in the house by the kitchen stove or in the workshop or anywhere where you can keep comfortable at the work. For apple trees you will need roots from apple seedlings, preferably one year old. These roots should be about the size of a lead pencil more or less and may be cut into lengths of about three inches. The only tool you need for this work is a common pocket knife, which should be quite sharp so you can make a clean even cut. You will need some waxed thread to tie the roots and scions at the junctions and for this purpose I have never found anything better than common sewing thread of about number 12 or thereabouts, coated with beeswax, says Farmer's Guide.



Method of budding.

Now take a piece of root and slope the top about an inch or so, and also a scion with the same slope at the lower end, cut a little gash in each about half way on the slope and unite the two pieces being careful to have the cambium layer of root and scion join perfectly on one side. Now tie with the waxed thread taking several turns around the junction to hold the two parts firmly together. Have ready a box five or six inches in depth and place your grafts in this box, filling in with moist earth nearly to the top of the scions. The junctions must be covered. Keep them in a moderately warm room and the earth moist—not wet—and when you take them out to set in the nursery rows you will find the joints nicely calloused and ready for immediate growth. These grafts should be transferred to the nursery rows as soon as the ground is in good working order. My rule is to transfer about the time cherry trees are coming in bloom, other things being equal.



Method of grafting.

The same instructions are for pear grafting except you should use pear roots instead of apple roots. Although a pear scion will grow on an apple root, yet you never get so thrifty a tree. Of course, if you want dwarf trees you must use quince roots instead of pear roots.

In regard to plums and cherries, most nurserymen propagate by budding altogether.

Budding can be commenced in June and kept up until September. My rule is to

bud apples first about the last of June, then pears about July 1 to 10, cherries and plums immediately after and peaches any time after July 20 up to September. In fact, I have budded peaches in September and had every bud grow, but this is only possible when the growth is extended late in the season.

Spraying for Scale

The scale is no longer the dreaded enemy that he used to be when he first invaded this country. Sprays have been found with which it can easily be held in check, if not entirely exterminated, but the chances are that the scale was brought to your place by birds and flying insects from some neighboring place, and, if so, it is useless to expect complete exemption. Prepare to spray this year and every year and take no thought of trouble and expense, for really they are not serious in cost per tree, and, besides, we are fully repaid for it all by the extra work accomplished by the lime-sulphur wash which is as good a fungicide as it is an insecticide, and there can be no dispute that we are badly in need of the former as of the latter. The brown rot fungus is, to say the least, as destructive as the scale and probably much more so at the present time, for it can work damage much faster and ruin a crop in the space of a few days. Besides, it demands for its control three or four applications of spray instead of one and the spray must be concocted with greater care and accuracy, else damage to the fruit and leaves may result.

Where to Find Apples for Sale

Mr. C. J. Eichhorn of Barnesville, Ohio, says he notices in the last Fruit Grower that you tell how easy it is to sell apples this year. He says if you know of any buyers send them to Western Pennsylvania, Eastern Ohio, or West Virginia. Go to Mercer Co., Pa.

C. A. Green's Reply: The trouble with many apple growers this year is that they lost heart and were so far discouraged earlier in the season that some of them did not dare to expend the necessary amount of money to carefully gather and pack all of the crop of apples. In Green's Fruit Grower I have endeavored to encourage apple growers to feel assured that carefully packed and carefully graded apples would be in demand at a profitable price during the winter or spring months, if not before. My prophecy has proved true. There has been a notable advance in the price of good apples in the New York and other eastern markets.

As I have often explained, sections of the country where apples are not or have not in the past been largely grown are not known to apple buyers in the way that they know western New York or the Hudson River, N. Y., section, or many other apple growing localities of this country, therefore those living in these secluded districts will have more difficulty selling their fruit than those in better known localities where buyers arrive in large numbers each season to make their purchases. I have lived many years and have had considerable experience with marketing apples, and I can assert with positiveness that I have never known the time when first class carefully graded and carefully boxed or barreled apples could not be sold at a profitable price.

The nearest approach to a demoralized apple market, so far as I can recall, occurred early this past fall of 1914, when news of the European war was fresh in the minds of apple growers. This war news seemed to paralyze fruit growers, as I have indicated in the opening of this reply. Apple dealers or buyers were also paralyzed by the war news, therefore the apple market was in a state of panic. Remember that panic times are never the times for selling anything. When a panic occurs, the level headed man, if he can do nothing more, stands still and does nothing except to protect his crops.

I can imagine the chagrin of the apple grower who allowed some of his fine fruit to go to waste this year, when he discovers now or later in the season that there is an active demand at profitable prices for such apples as he might have prevented from going to waste if he had been possessed with the necessary confidence in his business as a fruit grower.

For spraying vines and small fruits you need a light, easily handled but effective sprayer. Thousands of farmers and fruit growers find the answer to this question in the

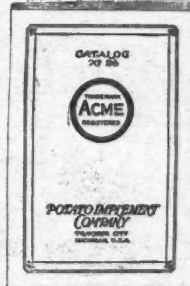
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Spraying and Its Importance

If fruit growers can only realize and understand that most, if not all, of fungous injury can be prevented by thoroughly spraying the trees, the value of the fruit crop could be easily doubled, says Farmer's Review.

These fungi develop on the leaves and fruit in the presence of moisture, and it has been found that if before infection has taken place the trees are thoroughly sprayed with either lime sulphur solution or Bordeaux mixture, the development of the spores will be prevented and the attack warded off. In order to be effectual, the spraying should be repeated often enough to keep the leaves and fruit at all times covered with spray.

In practice it is customary to spray fruit trees of all kinds when the flower-buds opened so they show a pink or white color, as at this time it is possible to cover the flower stalk and ovary, which will later develop into fruit, and thus protect them during the blossoming period. If the weather is cold and wet so that the opening of the buds is delayed more than two weeks, it is advisable to repeat the application.

A second spraying should be made as soon as the fruit has set in order to cover the newly developed leaves and the fruit. Care should be taken at this time to use an abundance of the spray so as to fill the calyx-cup at the blossom end of the apple and thus poison the apple worms when they attempt to enter the fruit. Two or three weeks later, another application is necessary; especially for apples and pears which are subject to attack of apple scab, and in seasons when the weather is cold and wet, a fourth application a little later is always advisable. For the winter varieties of apples, a fifth application during the first part of August (the date varying with the season) should be made for the second brood of the codling moth. A slight modification of these sprays may be used to advantage for any of our orchard fruits.

For the apple and pear, it is advisable to use a good brand of commercial lime-sulphur solution at the rate of one part to 40 parts of water; one part to 50 for the cherry and plum; and one part to 100 for the peach. Two or three pounds of arsenate of lead should be added to each 50 gallons of the spray for the control of curculio, codling moth, tent-caterpillar, canker worm, and other chewing insects.

For grape vines the same rules can be applied, but Bordeaux mixture, composed of 4 pounds of copper sulphate, 5 pounds of lime and 50 gallons of water, should be substituted for the lime-sulphur. Ordinarily, this treatment will suffice, for the control of plant lice and similar insects, an application of tobacco decoction or commercial tobacco solution should be used when the insects first appear.—L. R. Taft, Michigan.

Michigan Fruit Grows Bountifully

Here is our most beautiful and productive state with its great variety of soils, nature has assembled her choicest blessings in the shape of essential food elements and climatic conditions, says Farmer's Review. This makes it possible to produce fruit in great variety and abundance, which challenges the admiration of all who behold it for its beauty, and it beats the world with its delicious flavor. Where is the value in fruit, even if it has good looks, if it does not taste good? The juicy fruit with a rich pleasing flavor meets the requirements of human taste and the demands of the system.

There is perhaps no other place in our great country where the soil conditions are more favorable for growing fruit trees and vines than Michigan. There is a great variety of soils in the most of which the trees and vines flourish in a very satisfactory manner. The soils are charged with the essential plant foods that are necessary for the growth and development of the fruits that are grown in both garden and orchard. Originally there was an abundance of nitrogen, calcium, potash and phosphoric acid in the soil. In the newer portions of the state, the same conditions now prevail. In some of the older portions where the soil has been robbed of its native fertility, these plant foods must be supplied with those elements in a commercial form.

What is known as the "Michigan fruit belt" is in a true sense a misnomer. The term does not convey a correct idea in regard to the possibilities for fruit growing in the state. There is a strip of coun-

try along the east shore of Lake Michigan extending from the Indiana line north to nearly the straits of Mackinac, embracing about fifteen hundred square miles, where much attention has been given to fruit growing; and in most of the territory, great success has rewarded intelligent and well directed efforts. But that embraces but a small portion of territory, where fruit growing can be followed with success and profit. Along the Huron shore, peaches cannot be raised successfully, but on the elevations apples and most, if not all, the other fruits can be raised with success. In fact in many of the northern counties on the proper elevation, apples can be grown that challenge the admiration of lovers of fruit.

On the lower peninsula from east to west and north to south all the garden fruits are grown to perfection on all the elevations where there is drainage sufficient to prevent the land becoming water-soaked. On all the elevations where there is good air drainage, as well as water drainage, apples, plums, pears, quinces, cherries and hardy grapes, if properly cared for, grow, and astonish as well as satisfy the growers for the abundant yields, and the consumers with their excellent quality. Where were once dense forests are now blossoming with more than Eden's gladness and beauty the fruit trees and vines, and the sandy plains which were once like desert places, are like the gardens of the Orient, ready to respond to the intelligent management of the modern fruit grower and yield an abundance of luscious fruits, that return satisfactory profits for the expense and efforts bestowed on them. What was once considered "waste land" is now known to be capable of yielding luscious fruits which will bring wealth to the producers, health to the consumers and are a source of happiness to all who come in contact with them. Good fruit is one of nature's most beneficent gifts to humanity, and Michigan yields it in its most beautiful form, quality and flavor. Let us farmers of Michigan appreciate our favored position among the fruit growing portions of our great country.



Spy Orchard a Good Investment

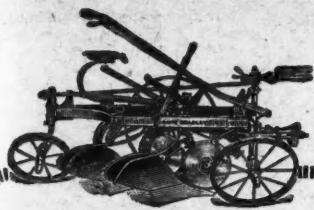
There is no doubt but that the Northern Spy should be grown more widely in Michigan, because, as one man wrote, "so few states can grow them at all." One man who has had much experience in renting Michigan orchards, wrote of his experience as follows: "Have leased the largest Spy orchard in Michigan, which has proven a better investment than any of our other orchards there." Two men considered this variety worth "double the Baldwin or Greening," but several men expressed their opinions that it was exceeded by the Red Canada.

The Northern Spy, in addition to the points already mentioned, is superior to either the Baldwin or Rhode Island Greening in flavor, when well grown. It is a most excellent winter apple, being suitable for either culinary or dessert use, as the flesh is very juicy, crisp and tender. Its size, beauty and fine flavor quality usually cause it to command high prices. It must be handled carefully because of its thin skin, and juicy, tender flesh, or much shrinkage in storage will follow. Its season is from November to the end of the cold storage period. The tree is hardy and healthy.—Michigan Farmer.

Testimonial

Dear Mr. Green:

I certainly appreciate your paper. The different articles contain a vast fund of information to all those that wish to learn of the fruit business. I am now 62 years old and have been associated with the raising of fruit about all these years.—L. C. Harris, Perryopolis, Pa.



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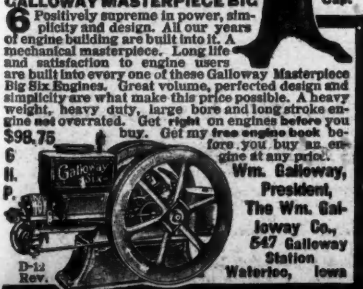
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Wm. Galloway,
President,
The Wm. Galloway Co.,
547 Galloway Station
Waterloo, Iowa

Across the Years

Written for Green's Fruit Grower by Martin L. Piper, Vt.

Across the years there comes to me,
A mother's sweet voice singing
To a little child upon her knee,
Sleep to his eyelids bringing
And rest to little hands and feet
That oft to mischief rally,
Or play in the brooklet clear and sweet,
That ripples down the valley.

Across the years there comes to me
The happy children's voices,
As they sing 'neath the old roof tree
The mother's heart rejoices.
The father to oft enters in
To the children's play and laughter,
And the old house rings with the merry din
From lowest sill to rafter.

Across the years I look and see
Familiar forms and faces,
That gather 'neath the old roof tree
In their accustomed places.
They sit around the humble board,
On homely fare oft dining
But ere they eat they thank the Lord,
Their hearts to Him inclining.

Alas, they gather there no more,
That home 'tis gone forever,
But some still linger on times' shore,
Bound by ties naught can sever.
Only the cellar walls remain,
By the brook down the valley flowing,
But mem'ry to a gray haired man
That picture fair is showing.

* My childhood home.

Improvement in the Apple Market

We are informed that the apple market of New York City is improving and that carloads of cold storage apples, New York standard A grade, have been sold in that city at \$2.60 per barrel.

It is remarkable that Baldwin apples, the variety most largely grown, should sell at so favorable a price as this in a year of large yields over a wide extent of country and during the presence of the greatest world wide war recorded by history, and yet I am satisfied that the average man, woman and child of this country is not fully informed of the value of apples as food, and that a system of education, or as it might be called of advertising, is necessary in order to popularize apple eating. Further than this, my opinion is that more helpful machinery should be used to facilitate the growing and handling of fruit, for at present nearly all the work done in the apple orchard is by hand or horsepower. The grading of fruit certainly should be done by grading devices in place of the mental exercise necessary in passing upon the size of each apple as it goes into the barrel.

THE SMALL FAMILY SUPPLY ORCHARD

Old and New

It is surprising how many varieties of fruit may be grown on a farm without much trouble and they all fit into their place and season so well that after we have had them to use for a while, we wonder how we ever got along without them. Especially does fruit, if nice and a little earlier than the common run, command a ready sale at good prices in the busy manufacturing town close by here. But if too early the demand has not yet arisen and I have found that sales were not so good, says Southern Ruralist.

When I began to develop this piece of property some six years ago, it was my determination to raise fruit only for my own use. I felt—and still feel—that fruit raising, to be a successful business, requires far more attention than merely setting out an orchard and waiting for it to grow. Being pretty certain other things would claim the most of my time, made me decide to let fruit growing on a large scale alone. I purchased for my home orchard, which is situated very close to our house so as to be handy for gathering, only individual trees of such species and varieties as we desired. With only one tree of each kind it made, nevertheless, a goodly number. We set out among the trees gooseberries, currants, raspberries, blackberries, strawberries, rhubarb and asparagus. We cultivated the trees and small fruits for three years, using the ground between rows for our garden, and I remember counting up twenty-eight different vegetables growing in the garden at one time. Our grapes, planted at the same time, were also worked with the orchard and garden.

There were about a half dozen good cherry and apple trees already on the ground, but they were very old and about done for. These I extensively topped and trimmed.



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hem, thus reducing the work of measuring, marking and turning to a minimum. It prevents expensive mistakes, saves time, work, worry and more than its cost on the first skirt made. It is made of nicely polished, nickel plated steel and will last a lifetime. It is also an excellent chalk marker.

DIRECTIONS—Set gauge on the floor so that the skirt will fall over the long wire, making it come under or inside of the skirt. Fold the goods under, so that the long wire will come inside the fold, as shown in illustration No. 1 and pin the hem in place. Slide the gauge along and repeat. The Ezy-Hem can easily be used as a chalk marker also. Place the gauge with the long wire finger outside and against the goods, and simply draw chalk along the wire lengthwise, using the wire as guide or rule.

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Woman's Dept.

New Dresses from Old Ones
Editor of Green's Fruit Grower:—The changing seasons bring their own duties, and if we are to have the family wardrobe ready for spring, we must begin early. This is especially true when the purse is light. It is a good plan to look over the clothing you have on hand, cleaning, mending and making over the dresses that need it. Then you will be able to decide what garments must be bought new, and the number may often be reduced to a much smaller one than seems necessary at first.

Many of the new styles are particularly kind to the woman who wishes to re-make her clothes. The narrow skirts may be widened in many ways. One of the new two piece models has an inserted gore at each side. These panels make the skirt two and one-half yards around the bottom when the plaits are drawn out, and they may be of the same material as the rest of the skirt, but usually they are of satin, silk or dull stripes. Any of the narrow two-piece skirts can be made over in this way. Another way to widen the narrow skirt is to put on two circular flounces of some other material, which may be part of another old dress. It is important to alter the waist of the dress when you change the skirt, so they will look well together, and this is accomplished by making the vest, collar and sleeves of the trimming material. The silk or satin sleeve in a cloth dress is new and stylish, and a great help in making them over.

Many an old skirt can be brought up to date by the use of the yoke. These yokes are either circular or made of three pieces, and are cut in a variety of outlines. Some are straight all around, others pointed on the sides, while still others have points in the front and back. The skirt portion is circular, gored, gathered or plaited. There are very few women who do not have several partly worn dresses made with the old fashioned wide skirts in their closets, and this is probably the best time they will have to use them. Unless the dress is black, you will usually find it faded in the folds or plaits, and dyeing the material is the best solution of the difficulty. Take the dress apart, wash the pieces in good suds and rinse in clear water. Choose the color you wish, and one or two packages of Diamond dye will make it the desired shade. Dark green, seal brown and wine color are popular, or if your dress happens to be white serge, it may be dyed a beautiful tan or dull blue. If your skirt is a very wide, plaited one, you can use the surplus width for a three piece yoke. Cut it by one of the new patterns, put it together carefully, and you will be well pleased with the result of your labor.

Whether the garment is made of new or old material, the importance of thorough and careful pressing cannot be over-estimated. Press the seams as you go, and if a seam is to be stitched on the outside, press the piece before the stitching is done. Quite often one sees a dress or suit that is well made and of good style with nothing to proclaim the amateur dressmaker except the lack of pressing. This fault is so noticeable and so easily remedied, that one cannot help wondering why it should exist at all.—E. J. C.

Household Hints
Eucalyptus oil will remove grease spots from any kind of material without injuring it. Apply a little of the oil with a clean piece of flannel and rub the material gently until the stains disappear.
That you stew a pound of prunes with pot roast and note the fine flavor imparted to the meat.
That salt will curdle new milk; hence in preparing milk, porridge, gravies, etc., the salt should be added last after cooking.
That great improvement will be found in tea and coffee if they are kept in glass preserve jars in place of tin boxes.
Keep a very fine knitting needle in the kitchen to try the cake. It is much cleaner than broom straws.
It is said that pieces of white wax put away with white cotton garments will keep them from turning yellow.

Cabbage should never be boiled longer than thirty minutes, for when the time is lengthened the leaves lose their tender crispness and become soft and dark colored.

Kitchen utensils made of wood may be kept clean and white by rubbing with soap and lukewarm water, to which is added a little common soda or household ammonia.

When colored clothing is stained with mud, let it dry and brush out all you can. Then apply a mixture of salt and flour; let it remain on, in a dry place, for a day or two, then brush off.

White enamel ware can be cleaned of stains by making a strong solution of baking soda and rain water. Put the utensils in it and boil them hard; they will be as white as new.

Make it Last.—Do you ever think, nowadays, of that time when we left them all and started out to seek our new life together? The Pullman was almost empty, quite empty at our end, and as we settled down for the long trip to the strange unknown land, I suddenly realized what risks, what terrible risks we were taking, we who in reality did not know each other at all. I remember how the city's outskirts slid rapidly past, till the open country came into sight, and not until you spoke did I realize how long I had been silent.

"What is it, little one?" you asked, slipping your arm around me. I could not reply at first, only hid my face, tear wet as it was, against your shoulder. "Try to make it last; try to make it last," was all I could say; and you promised it would always be as it was then—that we would always be sweethearts.

"It is almost time for you to come, now, and I must not write more, or you will find me here, here—and my eyes are not quite dry, dear, and my throat feels so queer I don't think I could greet you naturally just now."

"Oh, if you could only take me in your arms right now and hold me close against you—as you used to, as you used to."

The Ideal Woman

No social or political service, says Dr. Eliot the noted educator and ex-president of Harvard, can give women opportunity to contribute to the real progress and development of mankind comparable with that of rearing children and making a home for a family. No economic gains, no accessibility to the callings and professions, no better access to the social excitements and so-called pleasures of life can possibly compensate her for loss of her best chance of physical well being and sound intellectual and spiritual development. The active-minded mother who follows the mental development of her children receives a second schooling greatly superior to her first; and the woman who will survive as the teaching mother of a family whose motherhood grows more and more comprehensive as life goes on, and finally comes to embrace four generations of kindred and friends and all cast down and unhappy people.

Cake Hints

A good pinch of salt improves any cake. Half water, instead of all milk, makes a lighter cake.

If your cake rises in a mountain in the middle, the reason is your dough was too thick.

If it goes down in the middle, your dough was too rich—too much sugar.

The cause of large holes in cake is too much baking powder.

To sprinkle flour in greased pans prevents cake from sticking.

A pan of water in the bottom of the oven keeps the bottom of a cake from burning.

A paper over the tin keeps the top from burning.—Philadelphia Record.

He—What! Another new dress! That's enough to make me jump out of my skin! She—Why don't you do it? Then I can have a belt and a handbag made of it.—Ulk (Berlin).

Patterns for Women Who Sew.



1207—Girl's Dress. Cut in four sizes: 8, 10, 12 and 14 years. It requires 4 1/2 yards of 40 inch material for a 12 year size. Price 10c.

1210—Boy's Blouse Suit with Knickerbockers. Cut in four sizes: 3, 4, 5 and 6 years. It requires 4 1/2 yards of 27 inch material for a six year size. Price 10c.

1231—Girl's Dress with Guimpe. Cut in four sizes: 4, 6, 8 and 10 years. It requires 3 yards of 36 inch material for a 6 year size. Price 10c.

1208—Ladies' Combination Drawers and Camisole. Cut in three sizes: small, medium and large. It requires 2 1/2 yards of 36 inch material for a medium size. Price 10c.

1013—Ladies' Waist. Cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 3 1/2 yards of 27 inch material for a 36 inch size. Price 10c.

1220—Ladies' Dressing Sack. Cut in three sizes: small, medium and large. It requires 2 1/2 yards of 36 inch material for a medium size. Price 10c.

1225-1229—Ladies' Coat Suit. Jacket, 1225 cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. Skirt 1229 cut in six sizes: 22, 24, 26, 28, 30 and 32 inches waist measure. It requires 8 1/2 yards of 44 inch material for the suit for a 38 inch size. This calls for TWO separate patterns which will be mailed to any address on receipt of 10c FOR EACH.

1209—Ladies' House Dress. Cut in six sizes: 34, 36, 38, 40, 42 and 44 inches bust measure. It requires 6 1/2 yards of 44 inch material for a 36 inch size. The skirt measures 2 1/4 yards at its lower edge. Price 10c.

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Drummer—Don't you have old-fashioned barn dances any more?
Lew Lucas—Nope. Now we call 'em "garage socials."

H. R. Ruckstein—Steel Shoe Man—Dept. 137, Racine, Wis.

Real Wealth

Written for Green's Fruit Grower by Albert E. Vassar.

The city for wealth—the country for health, Then why not choose the latter? You the health will gain and you'll have the grain And your purse's growing latter.

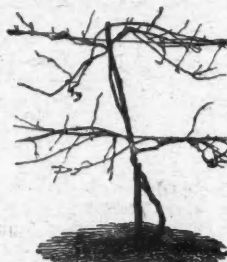
The money and health are the greatest wealth, Which ye mortals all are after And the two combined in the country you'll find, Where only the Lord's your master.

Answers to Inquiries

Training and Pruning Grape Vines

Green's Fruit Grower—I find many valuable hints in Green's Fruit Grower, as we have quite a bit of fruit on our farm of 120 acres close to a city. We have three-quarters of an acre of grapes. They did very nicely last year, yielding nearly 1000 baskets of grapes. We also have raspberries, strawberries, gooseberries and currants, and have a nice orchard started, which will be five years old this year.

I would like to know about pruning and training the grape vines. So far I have only two wires, one about 20 inches from the ground, the other 30 inches. This year I am going to put another wire higher up. How high should I place it? How should the vines be pruned? Is March the right time?—John Waldman, Wis.



Grape vine unpruned.

Reply: Place the additional higher wire about five feet from the ground. There are many ways of pruning and training grape vines. By the fan system you simply leave from three to five fan shaped arms, each cane reaching from the base to the top wire and spread sidewise as far as there is room. By another system you simply leave canes stretched



Grape vine pruned.

upon the top wire right and left. By another system you will leave a cane right and left for each wire, cutting off all other growth, leaving two or three eyes where each new cane is removed.

Whitewashing Trees

Green's Fruit Grower: After spraying trees in the spring for scale would it be beneficial to whitewash trunks of trees in fall to check scale?—Mrs. Milo H. Peterson, Michigan.

Reply: Yes, it will be helpful in different ways.—C. A. G.

Where Are the Trees Grown?

I sometimes get letters asking if trees from the south or from the west will thrive in the middle states. I have tested this matter thoroughly and have found that apple trees grown in Georgia are hardy in western New York, 700 miles north of where they are grown. I have good authority for stating that trees grown in the western states will succeed in the southern states. Nursery trees grown in the eastern states will succeed in the west as well as those grown there. These facts while seemingly contrary to the general opinion are well established nevertheless.

Drummer—Don't you have old-fashioned barn dances any more?
Lew Lucas—Nope. Now we call 'em "garage socials."

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Letters From The People

"Prudent questioning is the half of knowledge."—Proverb

The Great Blower Blackberry

Mr. C. A. Green:—On page 24 of the January issue of Green's Fruit Grower, in article relative to Blower's blackberry, in closing, the statement appears that this variety was originated by "a Mr. Blower of Erie County, New York." I knew this gentleman personally, and I beg to state that his home was in Chautauqua County, New York, and that he passed away last year. He is rated among us Chautauqua people as on a par with the Fay family,



whose genius made possible the great Chautauqua Grape Belt. I do not write this to disagree with any of the excellent things said of this grand berry, but to straighten statements. Mr. Blower's brother now has something like 12 or 14 acres devoted exclusively to this variety.—Earle W. Gage.

Dehorning Shade Trees

In last Green's Fruit Grower you spoke of this, in the case of Maples, that had been unformed for twenty years, and were 12 or 15 feet high. Perhaps you refer to "Sugar Maples." Any other species surely would have been nearer 50 feet high with that many years growth. And then if branches say 4 inches in diameter had been removed, wouldn't they decay at the center, leaving only a shell at the outside from which a large number of new sprouts would spring, only to break down from their own weight, thus well nigh ruining the tree? This would be the case, judging from my experience in the premises.—John S. Chandler, Florida.

Reply: The maple tree is 8 inches through trunk. It is making a good new top after dehorning. No, no rot occurs as wounds are covered with paint. I have to guess at the age of this tree. I dehorned four years ago an elm tree 20 years planted, nearly one foot through trunk. It is now the best formed elm tree on my place.

Apples Without Cultivation

Green's Fruit Grower—Gentlemen:—We notice on page 8 of your December number, an article in regard to the quality of apples grown under cultivation not being as good as that of those grown in sod. In this apple growing section, we have found this to be almost invariably the rule. This has been the dryest year ever known and the difference was more marked than ever, both in size and color. Our practice is to cultivate a young orchard until it comes into bearing and then sow to clover and bluegrass. The clover runs out in a few years and the bluegrass soon forms a complete sod. We do not pasture this, but allow it to grow up and fall down, making a perfect mulch. We run a mower over the grass once or twice in a season and clip off any weeds or grass that gets too tall. The soil thus treated is very porous and will absorb almost any rain we have besides preventing washing of the soil. The sod makes a good support for our power sprayers at any season of the year.

At picking time there is almost no loss from dropping, unless the apples strike a limb in falling. The drops are always clean and marketable. We fertilize but do not cultivate.—H. M. Seymour, Ill.

C. A. Green's Note.—On some soils the above method will work well. On other soils only low grade apples will be produced without cultivation.

An Authority from Cornell on Pruning

Dear Sir:—Your letter is received. I think I should agree with you that there is a tendency towards too much pruning, especially in cutting out secondary branches from the base of the main branches. However, I could hardly agree with you that a large number of branches may be desirable or that "nature" is a definite guide as to the best method of pruning trees. Certainly experience indicates that we can not follow nature in pruning grape vines. Unfortunately there is practically no careful experimental evidence available on the subject of tree pruning; and until there is such evidence, I do not think we are justified in giving definite advice. I think the tendency of the best New York growers during recent years has been to prune rather lightly, especially while the tree is young. By this practice no limb is cut out unless it be a crossing or interfering limb, or one where the advisability of its removal is very evident. Until we have more experimental evidence concerning pruning, I should be inclined to recommend this method.—W. H. Chandler.

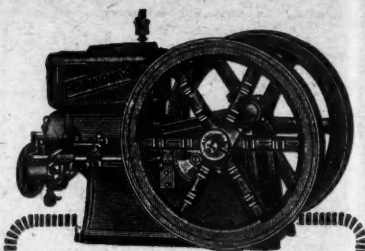
What He Learned from Green's Fruit Grower

Mr. C. A. Green:—Your request for suggestions in a recent issue of the Fruit Grower, leads me to say that there is only one particular in which I would like to see a change. That is where correspondents give their experience and in articles treating of experiments, I should like to see the state and county mentioned, so that I may determine whether I can, in my locality, profit by the experience related.

I have found in your magazine a liberal amount of practical information, which I have put to use with pleasure and profit. A recent number had an article on propagating grapes, which I was delighted to see and will put to good use next fall, as there is in my pasture a wild grape vine which has completely overgrown a wild apple tree and which bears yearly a good crop of beautiful large grapes. I have asked several farmers about here and not one could tell me how to make cuttings. I want to get cuttings from this vine to plant near my barn and house.

When I subscribed for your journal three years ago, there appeared (November) an article on pruning orchard trees. I had just bought this place and found on it twenty-five ragged and disreputable looking apple trees. I could get no one to prune for me, as there seemed to be a great lack of pruning knowledge among the farmers near me, therefore I took your article on pruning and went to it single handed. I pruned, sprayed and scraped just as I found recommended, and was rewarded the following season with a bountiful crop of 95 per cent. perfect apples, the trees looked 100 per cent. better, and in blossoming time how beautiful! My neighbors said the trees had not borne such a crop in twenty-five years. The pleasure and satisfaction gained were worth more than ten times the cost of the three years' subscription, and here's a renewal for three years more.—G. W. Bence, N. H.

The Baldwin is still the leading eastern apple and the Ben Davis the leader in the west, notwithstanding all the attention which has been given by horticultural writers to other and newer varieties. These two kinds make up over 25 per cent. of the national apple crop. Northern Spys come next, Winesap fourth and Greenings fifth. The twelve leading kinds make up about two-thirds of the leading crop, and the rest of the product is mostly comprised of twenty-three other kinds. Some of the several thousand kinds of apples are not grown to any such extent to affect the total figures of the apple crop. Missouri, Illinois and Arkansas lead in production of the Ben Davis, while New York is the greatest Baldwin state.



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When spraying, if showers come and wash off the poison, spray those trees a second time.

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If you "keep a bee," you should also have some strawberry plants. It is said that a swarm of bees will visit 10,000 strawberry plants in one day.

Send orders for fruit trees and shrubs early. Purchase these from reliable dealers.

With spraying apparatus so cheap, and spraying solutions so easily and cheaply mixed, there is no excuse for any man's failure to spray his growing trees.

Nature does not plant trees and shrubs in straight lines. The natural way is better than the artificial way. Set your shrubs in clumps and not in stiff rows. They will add a charm to the yard. Do not forget that open grass spaces are a delight to the eye.

Winter pruning is applied largely to heading and shaping the trees. Dead growth may also be removed at the winter pruning and to better advantage than any other time. New growth may be cut back in many cases to good advantage. This is especially true in the case of small fruits, grapes and other small or tender growth.

ing cheeks growth of trees. It makes no difference then at what time during the dormant season the pruning is done, the effect on tree growth will be the same. However, there is a certain advantage in delaying the pruning until late winter. There is always danger of a certain amount of winter killing of twigs and smaller limbs. Pruning after this danger is over will obviate any necessity of pruning twice. Then, too, where wounds are made early in the winter the freezing and thawing are apt to check wood growth and to dry the tissues so that a prompt healing is hindered and sometimes prevented. In case trees are making too vigorous a growth, it is sometimes desirable to prune them in summer. However, summer pruning, to be effective, must take place just after the terminal buds have completed their growth. This is usually during the latter part of June. Later pruning simply starts new wood growth and defeats the pruner's objects.

These general principles of pruning apply to all fruit trees of all classes and ages. Where one has a large orchard to prune he will usually find it necessary to begin in early winter and he will undoubtedly be busy the entire winter. If the pruning were delayed in such cases, most of it would never be done. It goes without saying that before one undertakes to prune, he should make some little study of fruit buds and tree growth. The best pruning tools are a sharp pruning saw and a pair of hand shears; the ax and the two-



Three happy pickers of Red Raspberries.

A good thing to do these days when there is not much to do except chores, is to give the grape vines some attention, as they should be pruned before the sap starts in the spring. They should be cut back all the past season's growth except two "eyes," or joints, next to the older vine. It looks like skinning them, but the fruit next season will be better quality and there will be a bigger yield.

A most valuable adjunct to gardening is a good cow, the best grade cow to be had, and perhaps fifty or more good chickens. These will add two hundred dollars to the net yearly income and will keep up the fertility of the little farm. Chickens will increase the berry crop by destroying harmful insects.

Cherry trees require the least pruning; merely cut out dead, broken or "crossed" limbs. Other trees need a judicious thinning out and sometimes cutting back. If two branches interlock, remove the smaller one. Avoid cutting so as to leave "stubs;" make neat cuts close to union; paint all large wounds. Be chary of cutting off large limbs; if it must be done, saw on under side first, partly through, and then saw from above.

The north side of a hill is the best location for an orchard, because changes in temperature are not so great as elsewhere. On south slopes the buds start too early in the spring. Cold air descends in hollows and closed valleys and is likely to kill the young buds. An orchard near a lake or large pond is not likely to be injured by frosts, because the water tends to make the temperatures more even.

Best Time for Pruning the Orchard

As a general rule, winter pruning promotes wood growth, while summer pruning

hand shears have but a small place in orchard operations.

Grapefruit too High

Present low prices of grapefruit have caused much discussion among operators as to the future of this delicacy. Years ago it was considered the fruit of the rich, and now it is low enough so that it can go on the table of any consumer. The one drawback to the proper consumption is the enormous charges made in restaurants and hotels. Many of the best places charge 25 cents for a half a grapefruit, and none of the best places less than 20 cents. Take a box of 54s and at 20 cents for a half portion the box would cost the consumer \$11.80. Such fruit can be bought today for \$1.50 to \$1.75. It is difficult to convince the restaurant and hotel people that it would be far better to sell more grapefruit at a lower price, says New York Produce News.

Some wonderful stories are told of the yields of grapefruit trees in Florida. Walter Preston, who manages the big grapefruit and orange orchard for his firm in the Manatee section, one season took 56 boxes of grapefruit from one tree, which were sold at \$10 a box, making that tree yield \$560 for one season. This probably is the record for a yield.

There are some old trees in Florida which withstood the freezes of 1895 that yield a wonderful amount of oranges. One of these trees recently had gathered from it in one season 44 boxes of oranges. These at \$2 a box would make the tree yield \$88 in one season. These old orange trees are large and have been permitted to grow tall, but there are not many of them in Florida.

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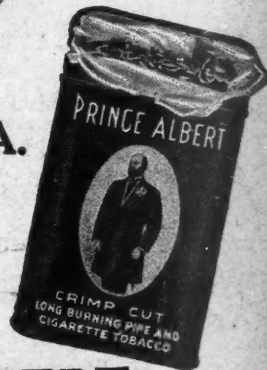
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No freight to pay. Actual hen controls everything. No lamps, no expense, no costly mistakes. Over 600,000 sold. Thousands of testimonials. Agents wanted. Free Catalog with Special Introductory Offer. **NATURAL HEN INC. CO., Box 1, Dept. 5, Los Angeles, Cal.**

MAKE HENS LAY

By feeding raw bone. Its egg-producing value is four times that of grain. Eggs more fertile, chicks more vigorous, broilers earlier, fowls heavier, produce larger.

MANN'S LATEST Bone Cutter

Cuts all bone with adhering meat and gristle. Never clogs. 10 Days' Free Trial. No money in advance. Send Today for Free Book. **J. W. Mann Co., Box 30, Milford, Mass.**

WE PAY \$36 A WEEK AND EXPENSES TO

raise poultry compound. Year's contract. **IMPERIAL HFG. CO., DEPT. 10, FARMERS, KANS.**

Throw Pearl To Your Hens

Then watch results. There's no better egg-making food for all poultry than **PEARL GRIT**. It makes shells, makes eggs, makes fowls. It serves a double purpose. Send for prices and our new valuable poultry booklet. **THE OHIO MARBLE CO., 265 Cleveland St., Piqua, Ohio**

Poultry Dept.

How to Set a Hen, and Her Care While Sitting.

When it is noted that a hen sits on the nest for two or three nights in succession she is ready to be transferred to a nest, which should be prepared for her beforehand. This nest should be in a box and composed of straw, hay, or chaff for nesting material. Dust the hen thoroughly with insect powder each week while she is sitting. In applying the powder, hold the hen by the feet, head down, working the powder well into the feathers, giving special attention to regions around the vent and under the wings. The powder should also be sprinkled in the nest. The nest should be in some quiet, out-of-the-way place on the farm, where the sitting hen will not be disturbed. Move her from the regular laying nest at night. Put a china egg or two in the nest where she is to



Gertrude Taates, of Massachusetts, who is caring for her white Pekin duck, writes us that these ducks are great pets in which the lady is greatly interested.

sit and place a board over the opening so that she can not get off. Toward evening of the second day, leave some feed and water and let the hen come off the nest when she is ready. Should she return to the nest after feeding, remove the china egg or eggs and put under her those that are to be incubated. In cool weather it is best to put not more than 10 eggs under a hen, while later in the spring one can put 12 to 15, according to the size of the hen. If eggs become broken while the hen is sitting, replace the nest with new, clean material, and wash the eggs in lukewarm water so as to remove all broken-egg material from them.

Testing the Eggs

Many eggs that are laid are infertile. For this reason it is advisable to set several hens at the same time. After the eggs have been under the hen for seven days they should be tested to see whether they are fertile or infertile. Infertile eggs should be removed and used at home in cooking or for omelets, and the fertile eggs should be put back under the hen. In this way it is often possible to put all the eggs that three hens originally started to sit on under two hens and reset the other hen again. A good homemade egg tester or candler can be made from a large shoe box, or any box that is large enough to go over a lamp, by removing an end and cutting a hole a little larger

than the size of a quarter in the bottom of the box, so that when it is set over a common kerosene lamp the hole in the bottom will be opposite the blaze. A hole the size of a silver dollar should be cut in the top of the box to allow the heat to escape. An infertile egg, when held before the small hole with a lamp lighted inside the box, will look perfectly clear, the same as a fresh one, while a fertile egg will show a small dark spot, known as the embryo, with a mass of little blood veins extending in all directions if the embryo is living. The testing should be done in a dark room.—U. S. Bulletin.

POULTRY NOTES

Chicks should not receive food until they are 36 hours old.

Physicians say that of all meats, poultry meat is the most healthful.

The more a hen exercises the more eggs she will lay. So keep her scratching.

To get eggs from a hen, she must be in the proper condition of flesh.

Darkened nests will do much towards preventing the egg eating habit.

In applying powder, hold the fowl by the feet, head down, and work the powder well into the feathers.

Pullet eggs do not hatch as well as hen eggs. Remember this when selecting eggs to incubate.

Have all eggs in the incubator as near the same size, age and breed as possible, if good, uniform results are expected.

A good way to keep an incubator clean is to cover the nursery floor with heavy paper before the chicks begin to hatch.

Give the hens plenty of clean water. They will drink more in the winter than in the summer. Feed different kinds of grain and often some green stuff.

Heavy paper is best for the brooder floors. These should be taken out and burned every day and replaced with fresh ones.

Wheat contains a larger amount of albumen than any other grain, and therefore should be the basis of all egg-producing foods.

Cover the floors of your chicken houses deep with dry litter, scatter cracked corn with a mixture of small grains, and the hens will work every particle of it out. The result is eggs.

It won't hurt layers to eat clean snow. They like it, are eager for it and we have yet to see any harmful results from fowls or chicks eating clean snow.

In order to keep the system toned up it is best to feed some green food, such as refuse heads of cabbage, turnips or alfalfa and clover leaves steeped a few hours.

If you set hens be sure to give them clean nests and keep them clean. The nests and the hens, too, may very well be dusted with good insect powder.

Experiments have proved that a hen in good condition will eat, on an average, three ounces of mash in the morning, two ounces of grain at noon, and four ounces of grain at night.

Take care of the hen manure, for in it you have one of the most valuable plant fertilizers known, if it is judiciously applied. Its value offsets a much larger portion of the cost of grain fed than most people think.

Don't feed the chicks anything for at least 24 hours after they are hatched. better wait 48 hours before feeding. But they should have all the tepid water they will drink right from the start.

Plenty of grit and oyster shells should be before the hens all of the time. Remember, the snow makes their usual supply of these necessities inaccessible in the winter.

Give charcoal to your fowls. It has a tendency to keep them in health. Corn on the cob, thoroughly scorched, will furnish charcoal in as good a form as there is. Feed it freely. No harm can come from it.

It is a recognized fact that animal food must be given during the winter months to get a satisfactory egg yield and keep the fowls in a healthy condition, and while it may be supplied in other ways, green bone is the most economical.

The Steinmesch Poultry Book is Now Ready.

Henry Steinmesch of the Executive Board of the American Poultry Association tells in this book the simple facts—of Housing and Feeding, of Incubation and Brooding of the many varieties of Poultry, of Eggs for hatching, etc. A copy will be mailed on receipt of 10c, stamps or coin.

HENRY STEINMESCH, St. Louis, Mo.

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and calendar of pure bred poultry; 70 varieties illustrated and described, many in natural colors. A perfect guide to poultry raising—full of facts. Low prices on stock and eggs for hatching. Incubators and brooders. 22 years in business. You need this noted book. Send 10c for a copy.

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PFIL'S 65 VARIETIES farm-raised Land and Water-Fowls. Eggs in season. Illus. Catalogue, and "Grower's Guide," 2c. An honest deal. Write today. HENRY PFIL, Farmer-Poultryman, Box 669 Freeport, Ill.

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57 BREEDS Fine pure bred chickens, Northern raised, handy and very beautiful. Fowls, eggs and incubators at low prices. America's greatest poultry farm. Send 4c for fine 100-page 214 Anna 1 Poultry Book. R. F. NEUBERT CO., Box 679, MANKATO, MINN.

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and furnish rig and all expenses to introduce our guaranteed poultry and stock powders. Address **BUCKER COMPANY, 3326, SPRINGFIELD, ILLINOIS**

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EGGS—15, \$1.00; 40, \$2.00. Thoroughbred Rocks, Wyandottes, Brahmas, Reds, Leghorns, Hamburgs. 19 varieties. Hens and White Orpingtons, 15, \$1.00; 30, \$2.00. Catalogue. 24 years' experience. R. E. MOORE, E. 4th Street, St. Louis, Mo.

Wanted Traveling Salesmen Experience unnecessary. See Big Pay while you learn. Write for list of positions open and testimonials from hundreds of our students and salesmen. \$500 a month. Address our nearest office. Dept. 60 **NATIONAL SALESMEN'S TRAINING ASSOCIATION** Chicago, New York, Kansas City, San Francisco

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I secure your patent or return fee. Manufacturers want Mills patents. Write for free book. **Mansell F. Mills, Registered U.S. Patent Attorney, 241 Washington, D.C.**



Barred Plymouth Rocks and Single Comb Brown Leghorns for Fall and Winter Shows

The best in quality at remarkably low figures.

Our Barred Plymouth Rocks and Single Comb Brown Leghorns again distinguished themselves by winning at the Flower City Poultry and Pigeon Association Show Rochester, Dec., 1914, in hot competition with the single Rock classes containing over twenty birds each, and pea classes filled. On Barred Rocks: 1st, 2d and 3d prizes; 4th cock; 5th and 10th cockerels. On S. C. Brown Leghorns 1st pen; 1st and 4th hen; 4th cockerel and 4th pullet.

We can furnish you birds for breeders and utility at
Males - - - \$5.00, \$7.50, \$10.00
Females - - - \$2.00, \$3.00, \$5.00
A limited number of cockerels only at \$3.00 each. Show birds a matter of correspondence. Order direct from this add to the farm of no regrets.

Green's Nursery Company
Poultry Department Rochester, N. Y.

How a City Man Made Good Growing Peaches, Pigs and Poultry

Written for Green's Fruit Grower by H. W. Cobb.

HAVING just completed an unusually bountiful harvest of fruit from Rochester, N. Y., trees, I thought possibly that you would be interested in my struggle and modest success in fruit growing. I am not exactly a back to the lander, having been more or less with the land since my family moved to a little one-half acre place in Ridgewood, N. J., when I was about fourteen years old. It was then that the inspiration came to me to raise chickens, and in connection with my first poultry investment I bought about thirty Abundance plum trees and planted them in the chicken yards. These trees bore enormous crops of beautiful plums, and the income, together with my income from three hundred white Leghorn hens, enabled me to buy an acre of land adjoining my father's place, and it was then that the fruit growing fever took possession of me.

From that day to this I have worked with the soil to the utmost of my strength and energy, but it has been not all pleasure and the crops have not always yielded as

to purchase on a long payment installment plan five acres of good rich clay soil adjoining the first acre; and to pay for this piece of ground and the planting of several hundred trees, I found that it would be necessary for me to secure employment and it was then that I went to New York, securing a position at a very small salary with a business house for whom I worked for twelve years, spending my day in New York as a salesman and working my farm evenings, holidays, early in the mornings, Sundays and every hour that could be spared from my regular occupation. I continued my active interest in the farm proposition and after planting the five acres to Elberta peaches and currants between the tree rows, together with a few Baldwin apples and other fruits, I used the space between fruit rows for strawberries, and if it had not been for my wonderful crops of Corsican and Brandywine strawberries, I would not be able to tell this little story today, because many a time I have run a hard race with the sheriff and it was a problem who would win, but the berries kept us moving, paid the interest on the mortgage and bought us more manure to hasten the fruit to maturity. One season we sold

A Matter of Choice

A volunteer Sunday school teacher had a lot of trouble in explaining the joys of the future life to his young charges. To a little girl he said:

"Don't you want to go to heaven?"

"Of course I do," answered the child.

"But why do you want to go to heaven?"

"Well," she answered, "I got to go somewhere, ain't I?"

Where do the poultry profits go? Have you ever figured this out? We have made an exhaustive study of this important problem and the answer is in our new Poultry Book, just off the press. Send 10c for a copy, to-day, and we will enclose our Cash Value Coupon. The book is worth several dollars to the poultry owner. **THE G. E. CONLEY CO.**

124 Conkey Bldg., Cleveland, O.



Vertical Farming PROVED

BY
Effects of
Orchard
Blasting

with

DU PONT
RED CROSS
FARM POWDER

These cuts are made from photos showing comparative growth of pear trees from Spring of 1913 to Aug. 1, 1914, Beltsville, Md. Orchard, Inc., Norfolk, Va.



IN DUG HOLE



IN BLASTED GROUND

ALL progressive farmers and orchardists know that trees planted in blasted ground grow much faster than those planted in the old way and bear fruit earlier.

This proves the truth of the principles of Vertical Farming, which aims to cultivate downward as well as to till the top soil.

Three years ago tree planting in blasted holes was experimental—now millions of trees are set out by the Vertical Farming method every spring and fall.

In like manner, blasting the subsoil to increase general crop yields, now regarded as experimental, will in a few years, be common.

To learn how and why Vertical Farming may double the yields of your farm, get the Free Reading Course in Vertical Farming, by Dr. G. E. Bailey, one of the best works on soils and soil culture ever published. Sent free with every request for our Farmer's Handbook No. F 31. Write now.

Established 1802 **DU PONT POWDER CO.** Wilmington, Del.

STAHL

Protect your trees, vines and plants by spraying in time. Stahl's "How, When and Why of Spraying" illustrates

and describes outfits for every need. It's FREE. Write at once for FREE 10-DAY TRIAL OFFER and Special Introductory Offer. Address **WM. STAHL SPRAYER CO., Box 54, Quincy, Illinois**

SPRAYERS



Live Well On Chicken Profits

You can do it when you go about it the Johnson way. Let me send you this poultry book and show you how we started \$30,000 others. It's no trick to live off the chickens and save the profits you make in other lines. You can let the chicken profits pay the bills—live on the fat of the land and still have money to put in the bank or put into improvements around your home. Get in touch with us and we will show you the way.

Old Trusty

Makes big hatches winter or summer for the beginner as well as the oldtimer. Now used by 330,000 poultry raisers, which is three or four times more than the next best can show. That's because Old Trusty owners go in for profits and get them. You take no risks the Johnson way. Old Trusty comes on thirty to ninety days' trial and ten-year guarantee. Also we pay freight. Write today for Old Trusty book and low price based on 100,000 sales this year.

M. M. JOHNSON CO., Clay Center, Nebr.



The upper cut is from peach orchard of Harry Wood Cobb, of New Jersey, which produced 8000 baskets the past year. The lower cut shows Elberta peaches just picked. Three acres of peaches yielded \$2700.

we had anticipated. Of later years, when I had many acres of peach trees in bearing, waiting for years for results, spending every cent I could beg, borrow and earn, with the sweat of my brow, working out by the day, trimming trees and other hard laborious work for neighbors and evading creditors as I would the plague, in the hope of a large crop that would put me in easy financial condition and repay amply for the years of toil and labor and anxiety, I have seen the beautiful pink blossoms develop and, with their coming, the great joy of success, when a black frost has killed every bud in a single night and the anticipation of affluence has turned into a dull horror of foreclosed mortgages and collectable judgments.

While many of us have passed through all this in our lifetime, we have lived to see the brighter and pleasanter side of life, and it has been my experience that joy and sorrow, pleasure and pain are about equally divided, and it is the fellow who stands up and fights who comes out ahead. On my first acre, I set out Elberta peaches and Fay's currants, and while there may be better fruit today, I have never seen larger quantities of peaches or currants than grow on those first plantings. I set the peaches twenty feet apart and the currant rows between, and manured heavily with barnyard manure, giving clean cultivation and producing potatoes or corn on the same land for the first two years.

The cash returns from this little piece of land in two or three years, enabled me

\$400.00 worth of berries from less than an acre of land, planted between peach trees. That strawberry crop will never be forgotten by the writer, as the harvesting thereof necessitated getting up at three o'clock in the morning and picking berries until train time which in those days was seven o'clock. We had a wonderful advantage in those early days in harvesting and selling our berries and fruit right in Ridgewood at good prices as this town is a thriving suburban town only twenty miles from New York and the demand for choice fruit is always in excess of the supply.

(Continued next Month)

As soon as the ground is frozen, it is well to put four or five inches of manure over the tulip bed.

Go over the house plants and ferns and remove all scale insects. Soap suds is good to use.

Ironclad Wins in 2 Biggest Hatching Contests

140 EGG **140 CHICK BROODER**

Mrs. C. F. Merriek, Lockney, Tex., with her 140 egg Ironclad incubator wins in the last hatching contest held by the No. Valley Farmer and Neb. Farm Journal. She placed 148 eggs in the incubator and hatched 148 strong chicks. Think of that! You can now get these famous winners—

140 EGG INCUBATOR and 140 CHICK BROODER—If ordered together, for only \$18.00; freight prepaid east of the Rockies. Both are made of California Redwood. Incubator is covered with galvanized iron and asbestos, hot water type, triple walls, copper tank and boiler, self-regulating, Tyson thermometer, O.K. burner, egg tester, primary, complete, set up ready to run. Brooder is large, roomy, well made with wire scratching yard. Compare material and construction with other makes; if you do you'll surely order Ironclad. Guaranteed 10 Years. 30 Day Trial. Order direct from this ad.; hundreds of dollars money back if not satisfied. Or write for free catalog. Ask the publishers of this paper about us.

IRONCLAD INCUBATOR CO., Box 25 RACINE, WIS.

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Both For

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JERSEY RED PIGS

will increase your fruit production, permanently enrich your soil and produce two profits from the same piece of land. Pigs of all ages at reasonable prices.

HATCHING EGGS FROM PRIZE-WINNING POULTRY

Winners at Madison Square, and all local shows. Indian Runner Ducks, Pekin Ducks, Parkes Strain, Barred Rocks, White Rocks, White Orpingtons and Single Comb Rhode Island Reds. Youngs Strain White Leghorns. All eggs \$1.50 per 15.

Orchards Planted and Planted, Trimmed and Sprayed by an expert of twenty years experience. Catalog free.

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Glen Rock Fruit and Stock Farms
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A 200 ACRE FARM FOR SALE

This farm is remarkably fertile, is situated in the fruit growing section of western New York about thirteen miles from Rochester, not far from Green's Fruit Farm. This farm is owned by a friend of mine. If you are looking for a farm please write me for particulars.

CHARLES A. GREEN, ROCHESTER, N. Y.

100 Gallon Cypress Tank
for storing water, for scalding and salting, and many other purposes. Can furnish with tight cover making it suitable for spraying for \$3 additional. We make all other size tanks in any shape, for all purposes. Steel towers to elevate tanks, bellows, wind mills, also silos, pumps and gasoline engines. Goods guaranteed as represented, or money back. Write for special proposition No. 3.

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\$100 Worth of Seeds Free To 1915 Customers

Write today and get my proposition. It's fair and simple. It's my way of introducing new varieties of seeds to show you what pure seed means and to interest you in my crusade for pure seeds at right prices. The fight is getting warm, but I have already joined the ranks. If you are with me, write today. Get My Big Catalog Free and Red Hot Special Propositions. Catalog beautifully illustrated 100 pictures—many in color—different from others. See my low prices on new and standard varieties of seeds, plants, shrubs, etc. Don't buy any seeds until you get my facts. Galloway Bros. & Co., 544 Galloway St., Waterloo, Iowa.

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The new principle of power spraying which has produced such remarkable results in prize winning fruit. No liquid pump. Lighter. Simpler. The spray is so much better than other power sprayers that the same liquid covers 1.4 to 1.2 more trees and covers them better. If it is **RESULTE** you are after investigate the ATSCO. Tell us what you have to spray. Write for free catalogue and what big growers say about it.

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The Hillside Sprayer is complete for any purpose, but indispensable for the man with a hillside orchard. We build a full line of High Pressure Sprayers, both Hand and Power. Our new tree book, "Important Information About Spraying," contains spray calendars, formulas and other valuable information. Send for your copy today.

DOMESTIC ENGINE AND PUMP CO., Shippensburg, Pa.

FREE Fine Camera and complete outfit for selling 20 Large Colored Art & Religious Pictures or 20 Pkg. Beautiful Post Cards. Satisfaction guaranteed or money returned. Order your choice today. **GATES MFG. CO., Dept. 337, CHICAGO**

How to Grow Fruit Free Tells what to plant in your locality, how to plant, trim and spray. Describes and pictures cur immense stock of Apples, cherries, Peaches, Pears, small fruits, etc. All "Wood Quality" stock. Also our big stock of ornamental trees, shrubs and plants. We sell direct only—at about half agent's prices. We will send our book absolutely free. Not the biggest book, but one you can depend on. Write today—return mail brings it. **WOODLAWN NURSERIES ALLEN L. WOOD**
553 Culver Road, Rochester, N. Y.

Pruning a Bearing Tree

My practice in pruning a bearing tree is to keep it reasonably open and to do a great deal of work among the smaller twigs, thinning out the unimportant ones, keeping bearing shoots and spurs apart, equalizing the bearing wood of every limb as much as possible and giving plenty of sunlight and air circulation through the tree, says Rural Life. It is more work to trim an apple tree in this manner as compared with the way trimming is generally done, but it is a large contributing factor towards fine quality and uniformity of size. It is my observation that a tree that has received too much pruning in its early years in the excessive zeal for an open head never becomes the beautiful and productive tree that we would get with a less amount of pruning.

Thorough Spraying

Our spraying operations are most thoroughly done and in consequence San Jose scale and codling moth are having a pretty hard struggle for life in our orchards. Our worst insect disturber is the aphid, and we have not done much of importance towards its control. The leaf roller, the red bug and the apple scab fungus in our particular section of the Hudson River district have not as yet given us any serious trouble. When they come, the work will be much harder. We fully realize that these and other bad things may reach us at any time, and are watchful. The fruit grower must be ready at a moment's notice to meet his enemies. It is never in any case plain sailing as in the old days when the markets were less critical and any sort of an apple would do; and the man who now comes out winner by producing a crop of perfect apples either must have a marvelous lot of nature's assistance, or must be a good fighter. It is not alone a matter of knowing, but of doing.

Dressings for Wounds on Trees

Many different wound dressings have been used, and nearly as many have been discarded because they did not meet some of the many requirements of such a covering, says Farmer's Guide. There are three necessary requirements: First, the dressing must be sufficiently fluid in composition to permit of its application during the winter months and early spring; second, it must form a water and air-tight covering that is adhesive; third, it must be of reasonable cost and easily obtained. Among the wound dressings often recommended are white lead and linseed oil, grafting wax, coal tar, gas tar, creosote, and common paint. Each of these has its advantages and disadvantages. It has been my experience that the pure white lead diluted with enough of raw linseed oil to make it spread readily will not injure the cambium layer, and it forms a solid watertight covering that has a tendency to stick for a long time. Grafting wax is an expensive and not altogether satisfactory dressing as it separates freely from the surface to which it is applied. The objections of coal tar and gas tar are that they penetrate too far into the wood and leave the surface rather open than watertight. It is my opinion that the tar coverings are injurious to the cambium layer and that the wound does not callus over as quickly as when painted with the white lead preparation. There is a possibility that the damage done by the tar dressings is over-estimated. Creosote is an excellent covering for the inside of a cavity that is to be filled. Common paint is good as far as it goes, but it does not have the permanent qualities of the white lead preparation, and will need renewing two or three times to once of the other.

The subject of the dressing must be studied by the orchardist, and the dressing that most nearly meets the requirements should be used. Common paint and white lead paste have a tendency to let the wood dry out and check. This should be avoided in all cases as it permits the disease spores which are distributed freely later in the season to enter. The raw linseed oil with the white lead seems to prevent the drying out and checking. A little experience with this preparation will acquaint the user with the most satisfactory proportions of the two materials.

In every case these dressings are to be used after disinfecting with bichloride of mercury, diluted one to one thousand, whenever the injury is the result of disease or of pruning, to eradicate diseased parts.

Economy in Writing

San Francisco Argonaut

A Glasgow merchant, famous for his stinginess, came into his office one morning and found a young clerk writing a letter in rather a flourishing hand. "My man," he observed, "dinna mak' the tails o' yer g's and y's quite sae lang. I want the ink tae last the quarter oot."

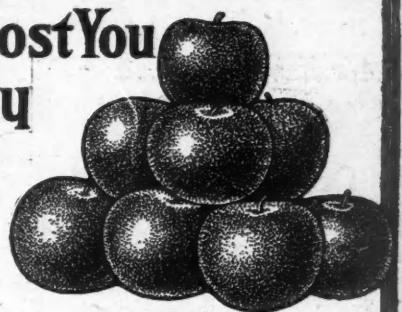
Genuine Beurre Bosc

We'll stake our last dollar on this statement. Picking season last of October, but best prices can be obtained if sold stored until the holiday season. Known to sell for \$8.50 a barrel about Dec. 15th. We pay all freight and transportation and guarantee delivery in perfect condition. Direct to you—no agent's profits to pay. Send for our free catalogue. Helpful information from cover to cover. **WM. F. RUPERT & SON, Box 70, Seneca, N.Y.**
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What will it cost You Not to spray For Aphis?



APHIS INJURED



PERFECT

The U. S. Dep't of Agric. Says \$30,000,000

is the annual damage done to the American fruit crop by insects. Aphis causes a considerable part of this loss and the standard insecticide recommended by experiment stations and spraying experts for this and many other orchard pests is

"BLACK LEAF 40"

Guaranteed to contain 40% Nicotine

THIS IS THE TIME TO SPRAY for Apple Aphis—just as the leaf buds show green. Don't delay till the foliage gives the Aphis protection. Use "BLACK LEAF 40" when buds are like the one shown in this picture. Write us for Apple Aphis Bulletin.

"BLACK LEAF 40" is not recommended for all insects; but for Aphis, Pear Psylla, Hop Louse, and many other soft-bodied sucking insects it has proven to be a highly effective and a very economical insecticide.



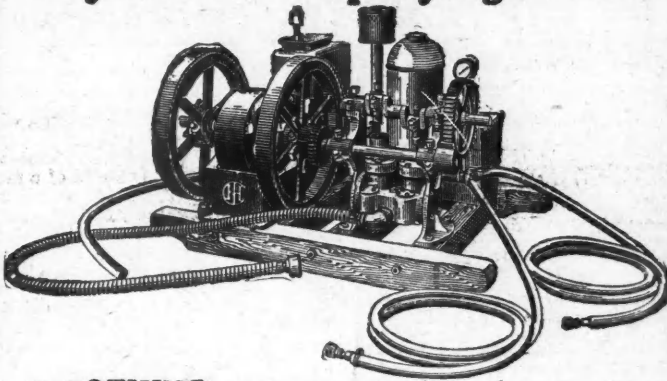
LET US HELP YOU PROTECT YOUR ORCHARD

If your dealer will not supply you with "Black Leaf 40", send us P. O. Money Order for \$2.50 and we will send you, express prepaid, a 2 pound can that will make 200 gallons of effective spraying solution. If you are in doubt about the insecticide you need, write us, send specimens, or give descriptions of your insect enemies and we will help you find the proper insecticide.

KENTUCKY TOBACCO PRODUCT CO. Dept. B Louisville, Ky.

"SPECIAL—BLACK LEAF 40" IS DUTY FREE IN CANADA"

Buy an I H C Spraying Outfit



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A Beautiful Setting for Your Home

Written for Green's Fruit Grower by F. H. SWEET

NO matter how small your homestead may be, it can afford a beautiful setting. This does not mean an elaborate display of trimmed evergreens and rare and costly trees, it means an inexpensive and generous supply of trees and shrubs, that will give shade, blossoms, grass and some times fruit. An American lawn can best be made of American trees—and it does not exclude fruit trees. The old aristocratic idea, that fruit trees were out of place among ornamental trees has passed away, as it is recognized that they can be made ornamental as well as profitable features.

Lawns are of three sorts: for shrubs, constituting what is called shrubbery; for trees, whether a grove, or a botanical garden or simply a frontage; and for playgrounds. When you have only an acre or two, it is best to classify your lawn as shrubbery and play ground united; with the house set in a grove. If economy of space still cramps, let the grove come

people have a notion that a country home consists in something that must incessantly be puttered over by half a dozen men. The owner only pays the bills. This is not really living in the country. The secret of success is to get a place in order; then hold it in order by personal superintendence. But do not undertake a lot of haberdashery, and mistake it for gardening.

In selecting material for an average country lawn, we can, and should, confine ourselves largely to native shrubs and trees. They must not be despised because they are common. I have never seen in any section of the United States where, within a few miles of his homestead, the resident could not secure a good collection of beautiful trees. Certainly this is true in most of the states. This would be likely to include wild cherries, haws, nuts, Judas trees, euonymus, barberry, viburnums and elders; and, among the evergreens, hemlocks, pines and arbor vitae.



Shrubs and vines add beauty to the home grounds.

down to a few commanding trees of perfect proportions; while the shrubbery may flank the house or partly surround it.

But in all cases be careful of a muddle or a medley of all sorts of trees and shrubs and flowers without any apparent relation to each other. This is the chief trouble with our American homesteads; they often have no distinctness of purpose as to detail, and no unity of the whole plan. Many of them convey no idea whatever, but are a succession of efforts to crowd in as much of the useful and beautiful as possible. The owner of half an acre crowds his stuff a little closer than the owner of an acre, but he means to get just as much. Fancy or rare trees are planted pell-mell with our common oaks, maples and elms. If the question were asked of the owner, "What are you really trying to express by this planting?" he would be surprised. He has never thought of anything except to get a lot of pretty things, and squeeze them in anywhere and everywhere. Tree agents persuade him to buy, and whatever is bought must find room. As likely as not, he has three or four out-leaved weeping birches in a row, or a line of evergreens. Not a tree, shrub, flowerbed or fountain bears a rational relation to anything else.

After a unified and consistent plan for a country home, the next thing should be inexpensiveness. Our country homes have generally nothing but a little frontage of grass, run over with a lawn mower once a week—a mean conception and a small achievement. Such a lawn, utterly useless from the esthetic as well as from the useful standpoint, costs more in the course of the year than a noble grove and a quarter acre of most beautiful shrubs. But this preference of lawn to grove is not our worst failure. Many of our wealthy

Of course, by expending a little more money, all these and more could be got from a nursery and perhaps in better condition for transplanting.

This list scarcely touches the beautiful things that nature has scattered along our creeks and in our glens, such as the soft maple. These trees are curiously broken up into varieties, and one of the most superbly variegated sorts is the swamp maple which grows wherever there is a moist dell. If young specimens are selected they do admirably well on our lawns. This is true also of our native elms, which grow in such profusion that there is ample opportunity to select those that are specially adapted to your needs. Besides these, the Kentucky coffee tree can easily be secured, and anywhere it proves hardy. The native persimmon is hardy as far north as Canada, and makes one of the most beautiful lawn trees. My purpose is not to suggest, by any means, a complete list, but to draw attention to the fact that our most common trees and shrubs are beautiful on the lawn.

A delightful lawn may consist wholly, or almost wholly, of fruit trees. An apple orchard is both ornamental and a source of pleasure. In it the house may be placed appropriately and economically; but this requires discretion in the selection of sorts that grow without too much sprawling. Apple trees need not be grown in rows, in order to bear well. In former times the Indians grew them in great groves of fifteen hundred trees. Pear trees are peculiarly fitted for tree lawns, and the dwarf varieties for shrubberies. There is hardly anything more beautiful than a cherry tree, either in blossom or in fruit. This is true not only of the round-headed, sour varieties, but of the tall and superb sweet varieties like Rockport,

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each of the following Famous Fordhook Vegetables which are unequalled in their class. No other small collection would quite so completely the requirements of the average garden. These are tested and proved varieties which have given the utmost satisfaction wherever used.

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Burpee's Fordhook Bush Lima. This variety of lima bean is shown natural size and color on page six of Burpee's Annual for 1915.

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Including genuine plants of the wonderful new pink climber, "COUNT KESPELLEN." The other five are: Antoinette Riviere, flesh; Waldeck, pink; Mrs. F. Bruger, copper-yellow; Mrs. Ben R. Cant, red; Bismarck, golden yellow. The six, all strong plants on own roots, postpaid for 25 cents. They will all bloom this summer.

Try Some (6 Chrysanthemums.....25c
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FATVAY FLOREAL COMPANY, Box 835 St. Charles, Ohio

When you write advertisements Please mention Green's Fruit Grower.

Bigareau, Windsor and Governor Wood. The Northern Spy also makes a capital lawn tree, if care is taken about its branching. The Astrachan, with its load of scarlet fruit, bears earlier, but I like late sorts better for lawns. In arranging the lawn it is well to mingle fruit trees or an erect-growing sort, like the Buffum pear tree, with evergreens. Magnolia acuminata is hardy everywhere and is a native. Its shaft, straight as an arrow, carries superb foliage. The tulip tree is also native, and our lindens can be found everywhere from Maine to Florida. For a quiet homestead you can even confine your planting to half a dozen trees like lindens, maples, butternuts and white ash. A linden grove constitutes just the place for a few hives of bees. This tree, in common vocabulary the basswood, is one of the finest trees in the world for lawns, for groves or on side streets.

The shrubbery, I have said, should, if possible, be a plot by itself and associated with your drives. I have already named a few of our common native sorts. Add to these altheas and hydrangeas for late blooming, and then never omit those varieties which only make their beauty known in latest autumn or in winter. One special object is to plant our lawns so that they can be made to brighten our homes during the coldest weather. For a winter beauty and warmth of color be sure to have barberries, and plenty of the high-bush cranberries, and the red-barked dogwoods. Near the house and serving as a windbreak should be an abundance of mountain ash. This tree takes but little room and is loaded with bird food. I should never consider a country homestead without having in mind an abundant supply of food for song birds, our allies in fighting insects. Barberries are good for this purpose, as are also the berries of the beautiful wild cherry and mulberry trees.

Now you comprehend, I think, my ideas of lawns as something nicely adjusted to the needs of the people, the birds, and the bees—not simply as conventional plantations of costly trees. Nor does a lawn consist of a smoothly shaved plot of grass. Grasses are all beautiful, and quite as beautiful when waving in the wind as when sheared close to the ground. A good country lawn should be mowed three or four times a year, with a scythe. At the same time do not get it into your head that every dandelion must be picked out, and every other little wild beauty dug out. Leave the little fussy lawns to crowded cities, where nothing simpler, sweeter and more homelike can be afforded.

Planting the Apple Orchard

An experienced man is liable to make one or more blunders in setting out an orchard for the first time, and as the trees are to occupy the same land for many years, it is important to guard against mistakes, for they may be a serious handicap to success all the way through, says Farmer's Guide.

The ideal location for most varieties of apples is an elevated or sloping ground with at least a small mixture of sand in the formation to insure drainage and make cultivation easier. Or if the land does not have natural drainage it must be secured either by tiling or open ditches. Good orchards are possible on low, flat ground, but the frost damage is greater while the quality of the fruit is impaired; besides, it is noticeable that on low, flat rich soil there is an abnormal growth of wood and the tree short-lived. Moderate fertility is best.

For the standard sorts set the trees not closer than thirty feet apart each way. It is a common practice to set them too close together which greatly impairs the color of the fruit, makes more trimming necessary and gives the tree a greater tendency to run up tall thus increasing the labor of gathering fruit. Some planters set the trees forty feet apart each way, using fillers between, such as Wagner, Wealthy, Grimes' Golden, and other rather small-growing trees.

To get good results plow the ground well in the spring or fall—the latter has some advantage as it makes early planting more likely. For ordinary soil, use some coarse stable manure, ashes and perhaps commercial fertilizer. If land is very steep and hilly, plowing may not be advisable, but trees can be set in sod and the practice of sod mulch cultivation followed. This is successfully practiced in many localities.

In throwing the dirt back into holes,

some of them were only partly filled, which made an excellent moisture trap to catch the rains that followed. A few days later as the ground became more dry the filling was completed. Along the latter part of May a straw mulch was placed around each tree to insure against drouth. It was a very dry summer that followed but every tree lived without using any water. The holes in the ground for receiving the trees must, of course, vary somewhat in size; but for two-year-old trees they should not be less than two feet across and from 12 to 18 inches deep. Be sure to have them wide enough.

On the west and north side of our orchard a windbreak of Norway spruce was planted. They were small plants not over two feet high and were set from seven to fourteen feet apart. They cost about two cents each including the freight and were purchased from the experiment station.

In purchasing trees to plant bear in mind that there is much deception among tree dealers. Many agents come along representing this or that nursery; but it is better to buy of some nursery direct that has long had a reputation of fair dealing. Deception is so easy in trees, because it is almost impossible to determine the quality or variety until long after the planting has been done, which gives the seller ample time to clear out of the country or quit business, hence it is impossible to compel him to make amends. Some years ago, we planted an orchard having a number of trees of the Mann variety. They were bought for Rhode Island Greening and look very much like them. The fraud was not discovered until at least a dozen years afterward.—H. E. White, Ohio.

Orchard and Garden Notes

Prepare flats and boxes for transplanting next spring.

Perennial onions should be mulched with strawy manure or leaves.

It is almost impossible to get too much manure on the asparagus or rhubarb plantations, excepting that it may delay earliness in spring.

The Japanese snowball (*Viburnum tomentosum plicatum*) is a desirable shrub for the lawn in many locations.

Wood ashes make a good fertilizer for the strawberry bed or orchard. Apply about 20 bushels to the acre.

One of the oldest trees in America, at Ravenna Park, Seattle, Wash., is dead. It is a fir tree 180 feet tall with a diameter of 20 feet and a circumference of 58 feet. It is supposed to be 1,800 or 2,000 years old.

Many forms of the Pelargonium can be grown to advantage in the house. The scented leaves of the rose geranium are especially pleasing.

This winter hang out suet and other food for the birds. They will appreciate it and in watching them you will be well repaid for your trouble.

Berried Solanums make excellent house plants at this time of the year. Among the best are the Jerusalem cherry and Chinese lantern plant. They may be planted like peppers in the spring and lifted from the ground late in autumn. Some of the common peppers are also good.

One interesting fact, brought out at the Minnesota Horticultural Society meeting, was that the great bulk of produce goes on to the market poorly packed and graded. The producer must pack and grade better if better prices are to be had for either vegetables or fruits.—Colman's Rural.

The Apple Market in New York City

Since the apple season opened this year 244,941 barrels have been taken from this port as against 244,460 barrels in the same period last year, says American Cultivator.

Maynard & Child, Liverpool apple cable, Monday: Devonian selling 17,000 barrels. Many slacks. Baldwins, \$3.60 to \$4.44; Mostly, \$3.96 to \$4.32; Greenings, \$3.60 to \$4.08; Spies, \$4.08 to \$4.50; Ben Davis, \$3.84 to \$4.08. London cable: Market steady. Nova Scotians, \$3.24 to \$3.77.

Simons, Shuttleworth, Webbing Co., Liverpool apple cable: Baldwins, \$4.08 to \$4.56; Starks, \$3.60 to \$4.08; Spies, \$3.84 to \$4.32; Greenings, \$3.60 to \$4.08. Good clearance. Market easier. Balance of the steamers East Point and Devonian selling.

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FALL-BEARING STRAWBERRIES. Ask for special letter, giving full information. Partridge Rock eggs, ten cents each. Sunset Farm, Apponaug, R. I.

DAY OLD CHICKS for sale. 13 varieties, hatched strong and healthy from pure bred stock. Catalog free. Old Honesty Hatchery, Dept. G, New Washington, Ohio.

HOME CANNERS—All sizes. Used by U. S. Government Schools, Girls' Clubs, Collaborators and Farmers everywhere. For Catalog and Special Offer, write Royal Home Canner Co., Dept. M, Albion, Illinois.

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EXCELLENT FRUIT and truck garden lands in Eau Claire County, Wisconsin. Wild lands fifteen to twenty dollars per acre; orchards fifty years old in vicinity; telephone and mail service. Ask for Fruit Book No. 9. Land Department, Soo. Ry., Minneapolis, Minn.

PRODUCTIVE FRUIT and poultry farm, with new six room residence. Poultry houses and all necessary outbuildings, eight acres, all planted to large and small fruits, sold at the door to automobile trade. Twenty miles from New York, near station, trolley, school, stores, etc. Receipts \$4,000.00 last season. Price \$7,000.00, easy terms. Will exchange for large farm. H. W. Cobb, Ridgewood, N. J.

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THOROUGHbred POULTRY. Twenty varieties. Eggs—15, \$1.00; 40, \$1.00. Catalogue. Henry K. Mohr, Quakertown, Pa.

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Plum Farmer Black Raspberry

The recent New York State Experiment Station says of promising new fruits as follows:

How long it will maintain its good character and high position is a question, since black raspberries are subject to many diseases, and varieties frequently run out; but at present, Plum Farmer is the best fruit of this type grown on the Station grounds, and very favorable reports are received of its behavior in other sections. The plants are vigorous, healthy and hardy, since they were little injured by the unusually severe winter of 1911-12. The fruit is large, about the size of Gregg, of good color, high quality and well adapted to shipping. Its season is early as it ripens a week or more in advance of Gregg. It is a splendid new fruit, well worth testing.

PERFECTION CURRANT

Though a comparatively new variety, the Perfection currant is already of commercial importance in New York State, but it deserves the attention of all growers of small fruits. It is of an attractive red color, slightly larger in both berry and cluster than the Fay currant, and superior to Fay or Cherry in flavor and quality. The berries are uniformly large to the tip of the cluster, and the base of the stem is free from berries, making it very easy to pick.

DIPLOMA CURRANT

The productivity, attractiveness and quality of the Diploma currant make it well worth planting in this State. Its berries are borne in long clusters, light red, with a thin transparent skin, a very juicy pulp slightly tinged with red and mild in flavor. It must be handled with care because of its thin skin and juiciness, but when picked and packed properly will, doubtless, ship long distances in good condition.

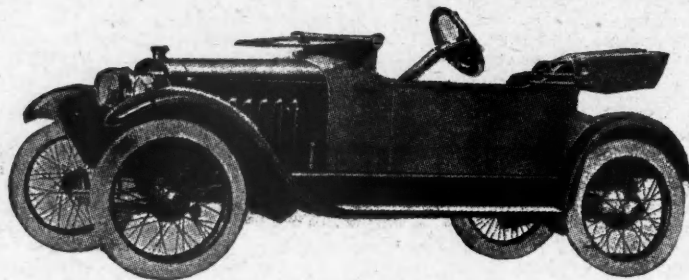
Orchard Inquiry

Mr. E. J. Mattern has an orchard of 300 trees on the mountain side in Pennsylvania, which was planted ten years ago and has received no attention. The soil has not been cultivated. The orchard is surrounded by timber. The question he asks is what treatment should this orchard receive this winter and next spring.

Reply: I would expect that the orchard would need pruning. I advise caution against over pruning. Simply cut out surplus branches—branches that interfere with each other and which make access to the trees difficult for apple pickers. In the hands of an inexperienced pruner it is always safe to advise that but little pruning be done each year rather than that severe pruning be done, and then the orchard be neglected for years. You can improve this orchard by cutting out from 4 to 6 branches that seem to be in the way and unnecessary. Spray the orchard at least twice the coming season.

I have been a subscriber about 12 or 14 years and have only one fault to find and that is, it don't come often enough. More people should read it. Can't see where it can be improved. It should please all who read it and are interested in fruits.—C. H. Colton, Johnson City, Tenn.

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Manager Territory 43

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The "V" type, two cylinder, water cooled motor has 3½ in. bore and 5 in. stroke, automatic plunger pump lubrication, thermosiphon radiator, Holley Carburetor, Atwater-Kent Ignition, automatic governor, controlled from the seat while the machine is in motion,

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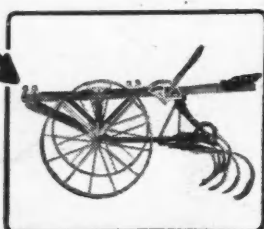
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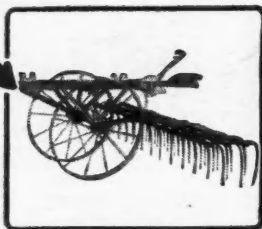
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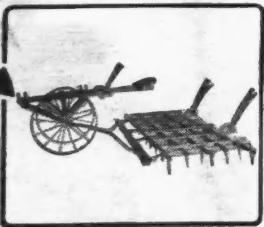
Columbus, Ohio



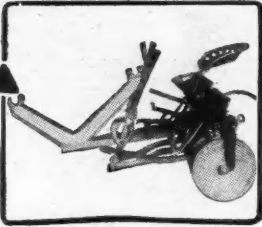
Attached to 7 tooth Diverse Cultivator—the truck is furnished



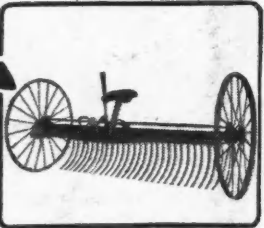
Attached to Weeder—Narrow truck is included in the purchase price



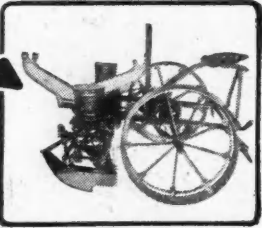
Spike Tooth Harrow—Narrow truck included in purchase price



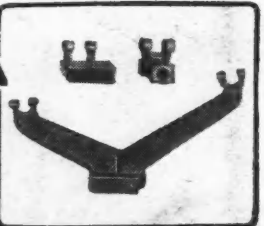
Light Disk—special attachment as in cut below



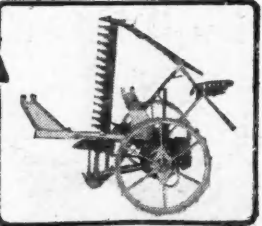
Hay Rake—special attachment as in cut below



With Corn Planter—special attachment as in cut below



Two of the attachments used to hitch to your own tools—Cost \$2 to \$5



Mowing Machine—special attachment as in cut opposite